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ABSTRACT

Summaries of 558 reports of reading research published between July 1, 1974, and June 30, 1975, are collected in this volume. The research studies are categorized into six major areas, four of which have been further subcategorized. The majority of studies reported were classified into the physiology and psychology of reading area. Large subdivisions under that major category include the following: visual perception, auditory perception, reading and language abilities, and factors relating to reading disability. Under the teaching of reading category, the testing subcategory remains one of the larger divisions. A large grouping of studies in the sociology of reading is concerned with the content analysis of newspapers, books, texts, and other printed materials. A listing of other bibliographies and reviews of reading research appears as the first major category of the present summary. Reviews are classified under specific subcategories or placed under a miscellaneous subheading. A 558-item annotated bibliography is keyed to the written text. (Author/KS)

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Summary of investigations relating to reading, July 1, 1974, to June 30, 1975

SAMUEL WEINTRAUB, HELEN M. ROBINSON, HELEN K. SMITH,
GUS P. PLESSAS, NANCY L. ROSER, *and* MICHAEL ROWLS

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Sources of the annual summary's citations

The number of research reports identified for this year's summary is an all-time high of 558. It appears from the number already identified that next year's summary will equal or exceed even that number. Given the increasing number of studies appearing each year, it may be of interest to the reader to consider in what journals the research is found.

About 300 journals are now regularly monitored for the summary. The number continues to grow as new journals are published. Monitored periodicals include Canadian, British, Australian, and other English language periodicals, as well as several foreign language journals which regularly print lengthy English abstracts.

Of the 558 citations in the present summary, 18 are to books and the remainder to articles appearing in books (78) or in journals (462). The information following is based on the journal articles only.

In this year's summary, 106 different journals are represented. Of these, 48 contained only one article selected. Slightly over half of the journal citations came from the 11 journals listed below:

JOURNAL	NUMBER OF CITATIONS
Journalism Quarterly	48
Journal of Educational Psychology	30
Journal of Learning Disabilities	23
Elementary English	22
The Reading Teacher	20
Journal of Reading Behavior	19
Reading Improvement	17
Reading Research Quarterly	16
The Journal of Educational Research	15
Psychology in the Schools	14
Perceptual and Motor Skills	12

A total of 30 periodicals—including the above 11 journals—had 4 or more reading studies reported in their pages. These 30 journals account for approximately 75 per cent of the research reports in the present summary.

Although the *Journalism Quarterly* often carries a large number of reading research reports, the figure this year is inflated due to the inclusion of articles remaining from the previous year. All of the citations from this periodical appear in the Sociology section of the summary. A large number of citations come from journals specifically addressed to the reading field. In addition to the ones listed above, the following reading discipline journals are represented in this year's summary:

JOURNAL	NUMBER OF CITATIONS
Reading (UKRA)	9
Reading World	9
Journal of Reading	7
Reading Horizons	4
Illinois Reading Council Journal	2
Indiana Reading Quarterly	2
Minnesota Reading Quarterly	2
New England Reading Association Journal	2

It can be seen that IRA affiliated journals are high sources of reading research. Journals from the fields of psychology, learning disabilities, and child development tend to publish large numbers of reading research articles, too, as do NCTE journals. In addition, one or more articles cited in the present summary come from periodicals in such fields as optometry, art, science education, mathematics, home economics, linguistics, medicine, speech and hearing, communication, adult education, mental retardation, and educational administration.

Even this brief analysis indicates how widespread interest in the field is and what diverse disciplines conduct research in reading. It also points up the difficulties of keeping abreast in a field in which the production of research progresses at such a rapid pace and in so many directions.

—The Editors

*Summary of investigations relating to reading July 1, 1974, to June 30, 1975**

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SUMMARIZES 558 REPORTS of reading research published between July 1, 1974, and June 30, 1975. The research studies are categorized into 6 major areas, 4 of which have been further subcategorized. The majority of studies reported were classified into the Physiology and Psychology of Reading area. Large subdivisions under that major category include the following: Visual Perception, Auditory Perception, Reading and Language Abilities, and Factors Related to Reading Disability. Under the Teaching of Reading category, the Testing subcategory remains one of the larger divisions. A large grouping of studies in the Sociology of Reading is concerned with the content analysis of newspapers, books, texts, and other printed materials. A listing of other bibliographies and reviews of reading research appears as the first major category of the present summary. Reviews have been classified under specific subcategories or placed under a Miscellaneous subheading. An annotated bibliography appears following the written text.

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* Articles for the summary were identified by Charlotte Kauppi, formerly a graduate student at Indiana University. Support for the annual summary came from International Reading Association.

Résumé des investigations portant sur la lecture, du ler juillet 1974 au 30 juin 1975

RÉSUMÉ 558 RAPPORTS dans le domaine de la lecture publiés entre le ler juillet 1974 et le 30 juin 1975. Les rapports sont répartis sous 6 rubriques principales dont 4 ont été subdivisées à leur tour. La majorité des études a été groupée sous la rubrique intitulée "La Physiologie et Psychologie de lecture". De grandes subdivisions ont été faites sous cette catégorie principale et contiennent les rubriques suivantes: "La Perception visuelle", "La Perception auditive", "L'Aptitude au langage et à la lecture", ainsi que "Les Facteurs touchant à l'inhabileté en lecture". Sous "L'Enseignement de lecture", la subdivision ayant trait a l'administration des tests est une des plus nombreuses de toutes les subdivisions de cette rubrique. La plupart des études comprises sous l'enseigne de la sociologie de la lecture se rapporte a l'analyse textuelle de journaux, de livres, ainsi que de divers matériaux de lecture. Une liste d'autres bibliographies et de comptes rendus sur la recherche en matière de lecture paraît comme la première catégorie principale de ce volume. Les comptes rendus ont été placés soit sous de catégories spécifiques, soit sous la rubrique "Études diverses". Une bibliographie annotée suit ce text écrit.

Resumen de las investigaciones relacionadas con la lectura, publicadas entre el 1° de Julio de 1974 y el 30 de Junio de 1975

SE EFECTUA UN RESUMEN de 558 informes sobre investigaciones realizadas en el campo de la lectura, publicados entre el 1° de Julio de 1974 y el 30 de Junio de 1975. Los estudios de investigatión se clasifican en 6 categorias principales, siendo 4 de ellas, a su vez, subclasificadas. La mayoría de los estudios presentados se clasifican dentro del área de la Fisiología y Psicología de la Lectura. Dentro de las numerosas subdivisiones que pertenecen a la categoria principal, se encuentran las siguientes: Percepción Visual, Percepción Auditiva, Aptitud para la Lectura y el Lenguaje, y Factores Relacionados con la Inaptitud para la Lectura. La subclasificación denominada Examinación, constituye una de las mayores divisiones correspondientes a la categoría de la Ensenanza de la Lectura. La gran agrupación de estudios efectuados en Sociología de la Lactura, se refiere al análisis del contenido de periódicos, libros, textos y otros materiales impresos. En la primera categoría principal del presente resumen, aparece una lista de otras bibliografías y reseñas realizadas en la investigación de la lectura. Las reseñas han sido clasificadas en subclasificaciones específicas, o colocadas bajo el subtítulo de Miscelánea. A continuación del texto aparece una bibliografía comentada.

I. *Summaries of specific aspects of reading research*

In this section is to be found a listing of published summaries of research. Annotated bibliographies, syntheses and analyses of research, and critical reviews of specified research reports and/or of research design in general are categorized under this heading. The summaries have been classified under topic headings whenever 2 or more articles related to a single topic appear. The Miscellaneous category is a listing of summaries where only one article on a given topic appeared.

I-1 General summaries

An overview of recent research in reading, by Agin (4)

Annotated bibliography of research in the teaching of English, July 1, 1974 to December 31, 1974, by Dieterich (111)

Reading research in Britain—1974, by Goodacre (176)

1973 review of research in college-adult reading, by Raygor, Browning, Kagan, Miller, and Schmelzer (395)

A summary of research studies relating to language arts in elementary education: 1973, by Sheldon, Lashinger, Troike, and Shapiro (448)

Summary of investigations relating to reading. (July 1, 1973, to June 30, 1974), by Weintraub, Robinson, Smith, Plessas, and Rowls (531)

I-2 Readiness/language acquisition

When are children ready to learn to read? By Laird and Cangemi (275)

Readiness training implications from research, by Paradis and Peterson (367)

Early language development: Foundation or reading, by Smith (466)

I-3 Beginning reading

Cue selection and discrimination learning, by Allington (7)

Processes underlying the learning of printed words, by Barr (21)

Planned variation in Head Start and Follow Through, by Bissell (34)

Head start can contribute to reading, by Borden, Handley, and Wollenberg (45)

Some curious paradoxes in reading research, by Downing (118)

Long versus short words in beginning reading, by Groff (184)

Sight words: the humpty dumpty of reading instruction, by Groff (187)

Successive approximation and beginning reading, by Hoskisson (223)

An international overview of primary reading practices, by Malmquist (308)

Sex factors in learning to read, by Stanchfield (477)

I-4 Auditory skills and reading ability

Reading ability and auditory discrimination: Are they related? by Groff (185)

The relationship of selected auditory perceptual skills and reading ability, by Hammill and Larsen (195)

I-5 Sex roles in children's and adolescents' literature

Children's literature—a feminist viewpoint, by Tibbetts (496)

You won't do: What textbooks on U.S. Government teach high school girls, by MacLeod and Silverman (305)

I-6 Learning disabilities—mental retardation and reading

"Sight" words and the disabled reader, by Groff (186)

Reading comprehension skills *vis-a-vis* the mentally retarded, by Hurley (226)

Evaluation and implications of research with young handicapped and low-income children, by Karnes (253)

Can reading problems be predicted? by Lillywhite (290)

Research in learning disabilities, by Oettinger and Majovski (361)

Acceptable and controversial approaches to treating the child with learning disabilities, by Silver (455)

Attention deficits in children with learning disabilities: A review, by Tarver and Hallahan (490)

Children with specific learning difficulties: The effect of neuro-developmental learning disorders on children of normal intelligence, by Francis-Williams (152)

Psychoeducational foundations of learning disabilities, by Hallahan and Cruickshank (194)

I-7 Readability—legibility

Assessing readability, by Klare (264)

Criticism, alternatives and tests: A conceptual framework for improving typography, by Macdonald-Ross and Waller (302)

The cloze procedure revisited, by Rankin (393)

A brief annotated bibliography, by Hartley and Burnhill (202)

I-8 College reading

Evaluation of college reading and study skills programs problems and approaches, by Anderson (13)

The effect of college reading improvement programs on academic achievement, by Fairbanks (144)

I-9 Informal reading inventories

IRI's at the secondary level re-examined, by Froese (160)

A critical review: Informal reading inventories, by Pikulski (379)

I-10 Mass communication

Uses of mass communication by the individual, by Katz, Blumler, and Gurevitch (254)

Mass communication and socialization, by Hyman (229)

Functions of mass communication for the collectivity, by Davison (102)

Mass communication and the political system, by Bobrow (42)

The management of mass media, by Bogart (43)

Gatekeeping: Mass media systems and information control, by Donohue, Tichenor, and Olien (116)

Mass communication and information diffusion, by Robinson (406)

The interpersonal context of mass communication, by Chaffee (76)

The socialization perspective and communication behavior, by McLeod and O'Keefe (327)

Instrumental utilities and information seeking, by Atkin (14)

Marketing communication and the hierarchy-of-effects, by Ray (394)

Application of signaled stopping technique to communication research, by Carter, Ruggels, Jackson, and Heffner (73)

Mass communication in political campaigns: Information, gratification, and persuasion, by McCombs (322)

The communication environment of the urban poor, by Dervin and Greenberg (106)

Mass media portrayal—sex and violence, by Fuchs and Lyle (161)

Environment and communication, by Stamm (476)

The political impact of mass media, by Seymour-Ure (447)

I-11 Language, linguistics, and reading

Research on the relationship between the meanings of morphemes and the meanings of derivatives, by Shepherd (449)

Sentence-combining as a curricular activity: Its effect on written language development and reading comprehension, by Stotsky (483)

The role of vocabulary knowledge in comprehension, by Stratton and Nacke (484)

Language medium in early school years for minority language groups, by Engle (139)

A comprehensive annotated bibliography of American black English, by Brasch and Brasch (50)

Dialect and reading: A review of alternative solutions, by Somervill (472)

I-12 The IEA reading study

The IEA reading study: A review, by Berger (30)

The IEA literature study: Two reviews, by Burton and Early (63)

A methodological critique of the 1973 IEA survey of reading comprehension education in 15 countries, by Downing and Dalrymple-Alford (119)

I-13 Cognition

Cognitive development and reading, by Elkind (135)

Acquiring skill in reading: A review of experimental research, by Maliphant, Supramaniam, and Saraga (307)

Learning styles: Can we grease the cogs in cognition? by Wagner and Wilde (517)

I-14 Miscellaneous

A different look at reading in the content areas, by Carlson (69)

The process of perception in wine tasting and reading, by Dewitz (109)

Introspective-retrospective case studies in retrospect: Implications for modeling the reading process, by Harker (198)

A review of the factor analytic research in reading, by Haase (192)

Accountability and the teaching of reading, by Hillerich (213)

A critical review of research on teacher readership characteristics and implications for performance-based teaching, by Ilika (230)

A valuable review of factors related to achievement in reading, by Kahn (249)

The function of covert oral behavior (silent speech) during silent reading, by McGuigan (325)

Characteristics associated with underachievement: Targets for treatment, by Mitchell and Piatkowska (340)

ITPA and academic achievement: A survey, by Newcomer and Hammill (356)

Insights from research: Children's behavior while reading, by Robinson (405)

When does reading make a difference? by Shirley (451)

Sense modality research and the acquisition of reading skills, by Silverston and Deichmann (456)

Some basic factors in reading difficulties of the disadvantaged, by Smith (467)

Research in children's literature: A need for standardized procedures, by Tibbetts (497)

Eye-movement measurement techniques, by Young and Sheena (555)

Perturbation model for letter identification, by Wolford (551)

Does book reading influence behavior? by Zimet (557)

Reading for meaning, Vol. 2, The reader's response, by D'Arcy (95)

Using personality test data in individualized reading instruction: Brief reports of five studies of personality and reading, by Tillman, Millott, and Larsen (499)

II. *Teacher preparation and practice*

To ascertain the views of teachers as to why reading is taught, Davis (101) received a total of 367 responses from school personnel in a survey covering a 3-state area. Of the responses, 46 per cent were found to consider reading as a work-oriented tool essential to other learning and important for gaining knowledge. Among other categories of responses, 8 per cent stated that reading for pleasure and enjoyment were important; 2 per cent of the respondents disclosed that reading was a means to stimulate and develop the higher levels of thinking.

Flood and Zehm (149) described 2 findings from a questionnaire addressed to an unidentified number of primary grade reading teachers in California and New York. Teachers were asked to report their perceptions of the weaknesses of their respective reading programs. Nearly half of the respondents reported a lack of adequate materials, describing current reading materials as rigid and lacking flexibility. A second finding of the study indicated that 36 per cent of the teachers were unable to make an effective evaluation of their pupils' reading growth because of a lack of suitable diagnostic tests. Dissatisfaction with current tests appeared to have 3 bases: 1) One-third of the respondents felt test items to be "inadequately standardized," 2) Nearly one-fifth felt standardized tests failed to integrate items involving growth in language arts skills; 3) One-fifth felt that evaluation of pupil progress was hindered by a dearth of published tests designed to evaluate specific instructional approaches.

Koenke (267) surveyed 664 Illinois secondary school English department chairpersons to determine whether the services of a reading specialist would be desirable in each school. Of the 315 respondents, 303 were positive. Because 141 of the respondents commented on their answer, Koenke categorized these responses as to whether they emphasized, justified, or qualified the response or whether they described the program or the specialist. Of the 64 chairpersons who justified their responses, 56 were positive, indicating the need for help with reading problems (50 per cent), alleviation of failure (11 per cent), improvement of students' reading (11 per cent), inadequacy of present staff's training teaching in reading (11 per cent), and failure of elementary and junior high teachers to effectively prepare students (14 per cent). For the qualified response category, 38 per cent of the chairpersons noted a lack of funding to employ a specialist, and 38 per cent emphasized the need for better earlier instruction. Twenty-four per cent were doubtful that many students can be taught to read in high school. The 20 descriptions offered as to the role of the reading specialist ranged from limited to pervasive—from teacher of speed reading to a resource person for all teachers.

Davey and Moretz (97) surveyed 26 commonly used reading texts to examine the occurrence, definition, and inferred meanings of selected technical terminology. Terms surveyed included: *decoding, word recognition, word perception, word identification, word analysis, word attack* and *sight vocabulary* or *sight words.* Definitions for each term were classified independently by the investigators according to the processes delineated: 1) print-to-speech; 2) print-to-speech plus meaning; 3) print-to-meaning; or 4) a combination of these. Three other categories were developed to classify unclear, unexplained, or missing terms. They found that the terms more often referred to print-to-speech than to print-to-speech plus meaning. Both print-to-speech and print-to-meaning were given numerous and diverse labels. All but one term (*word identification*) were used to refer to different processes. There were 14 cases of authors using terms without explanation and 17 cases of unclear explanation of terms. The investigators attribute the existent diversity to lack of behavioral specificity in the verb portion of the definitions, the complexity of the sound/meaning relationship in reading, and the lack of understanding of the reading process itself.

Newcomer (355) attempted to gain information regarding teaching judgment of modality-related learning styles, intelligence, and language arts achievement. Twelve fourth grade language arts teachers from 3 public schools in Chester County, Pennsylvania, rated between 10 and 13 of their students on auditory processing competencies, visual competencies, intelligence level, and language arts skills. The 137 students had a mean age of 112 months, a mean IQ of 98 (*Short Form Test of Academic Aptitude*) and either a third or fourth grade reading level. A 20-point, author-devised scale rated children as good, average, or poor on a series of information processing behaviors involving visual or auditory channels. Teachers rated children's language arts abilities and IQ as poor, average, or high. The subjects' performances in visual and auditory processing ability were obtained from individually administered subtests of the *Illinois Test of Psycholinguistic Abilities.* Achievement scores in reading, spelling, and language usage were obtained from the *Comprehensive Test of Basic Skills.* Pearson coefficients were computed to analyze the data. The results indicated that teachers regard IQ and language arts skills as equivalent variables (r = .92); they do not appear to distinguish between auditory and visual modality processing abilities (r = .90). Estimates of IQ and language arts skills correlate highly with teachers' ratings of auditory and visual learning processing, indicating a great deal of overlap in these 4 areas. Teachers were adept at estimating pupil IQ (r = .93). They were less successful judging modality learning processes (r's = .58). Poorest prediction of student abilities was in the area of language arts (r = .27). There was a low positive correlation between all 3 process tests and the language arts achievement test. Even though all coefficients were statistically significant at the .05 level, none of the process tests indicated great practical significance as predictors of language arts ability. Teachers tended to over-emphasize the importance of the process-achievement relationship, particularly overinflating the predictive value of IQ.

Page and Carlson (366) compared the word recognition errors identified by 17 certified reading specialists as they listened to an audiotape recording of a child reading orally at his independent level. To examine the scoring and interpretation practices of well-qualified specialists, the researchers directed the subjects to mark the errors on a typescript and to count only those errors they would use to derive a word recognition score on an informal reading inventory. The specialists varied considerably in describing oral reading errors. Six of the 17 respondents estimated the material at independent level, 5 rated it instructional, and the remaining 6 felt it to be frustrational. The researchers pinpoint lack of systematic scoring techniques and classification of errors as one source of the divergent responses. In addition, they focus on need for tape recording the oral reading segments of informal reading inventories and periodic reliability checks of the examiner's ability to attend.

Pumfrey (383) surveyed the effectiveness of 2 British school support agencies (Remedial Educational Services—RES, and Schools' Psychological Services—SPS) in providing teachers with opportunities to attend inservice courses and to obtain information about the uses and limitations of reading tests. Questionnaires distributed to 164 psychologists were designed to determine the following: 1) whether or not the service agencies worked together; 2) the extent of inservice coursework with a focus on reading testing; and 3) what printed materials concerning testing were available. Results from 159 returns were tabulated on a 2 × 2 grid; 60.4 per cent of all districts offered courses; 33.3 per cent offered pamphlets. Larger districts offered more courses than the smaller boroughs. A considerable number of SPS/RES agencies provided neither courses nor materials to their teachers. It was suggested that more training in the larger counties was due to better funding and that the data presented would lead to reconsideration of the adequacy of teacher training programs by the districts.

Olshavsky, Andrews, and Farr (364) investigated the abilities of experienced classroom reading teachers in a Midwestern city to differentiate among their students' abilities in reading subskills. The 3 teachers each chose different methods of assessing specific reading skills of word attack, vocabulary, and comprehension (including informal and standardized measures) after agreeing upon operational definitions of the subskills. Twenty-five second grade students from a parochial school were rated by each teacher on one component per day in rotated order over a 3-week period. The agreed-upon 7 point rating scale ranged from "does not have the skill" to "has complete mastery of the skill." The number of dimensions for each skill varied according to raters' operational definitions. A score for each child for each skill was determined by adding the testers' ratings along each dimension for each skill. These scores were then used in a correlation matrix with item deletion. All of the obtained validity coefficients, significant at the .01 level, were evidence of convergent validity. In general, it appeared that the teachers tended to rate children's reading in a global fashion. Correlations of different skills with each other when measured by the same teacher were generally higher than the same skills measured by different teachers. Discriminant validity evidence for all subskills measured by the chosen tests and agreed-upon scales was almost non-existent. The exception appeared to be the vocabulary validity coefficients for Rater A with Rater B and Rater B with Rater C. The authors conclude that failure to achieve discriminant validity raises questions about validity of the selected instruments, the ability of teachers to identify the subskills of students, the actual existence of subskills of reading which can be identified and measured, and/or the makeup of standardized reading tests and instructional materials.

Jorgenson (246) examined the abilities of 57 urban and 37 suburban teachers in a metropolitan county to judge the reading difficulty of 6 paragraphs selected from the *Betts Informal Reading Inventory*. The reading levels of the paragraphs ranged from third preprimer to fourth reader. Identifying information was eliminated from the paragraphs, and they were presented to the teachers in random order. Frequency distributions indicated that the sample of teachers had little difficulty identifying the easiest paragraph; but as the grade level of the paragraphs increased, the variability of the ratings increased, reflecting decreased accuracy in identifying correct grade level. A one-way analysis of variance revealed a significant grade level effect by teacher for the means of ratings for the first and second grade paragraphs. There were no significant grade level effects for third or fourth grade paragraphs. Mean ratings indicated that first grade teachers were better able to judge lower level paragraphs accurately than the teachers at higher grade levels; for paragraphs above second grade level, no grade level of teacher was consistently better able to judge accurately. Pearson product-moment correlations were computed to determine the relationship between years of teaching experience and ability to estimate grade level. Within the sample of suburban teachers, experience was significantly related to accurately rating only the fourth grade paragraph; urban teachers were significantly better able to identify both first and fourth grade paragraphs with increased experience. When accuracy of urban and suburban teachers' estimates of reading level were compared, percentage of accuracy increased for the suburban teachers except for the primer paragraph, while per cent of urban teachers who make accurate judgments for each paragraph decreased. A t-test adjusted for sample size indicated ratings of urban teachers were significantly higher than those of suburban teachers. The authors concluded that the urban teachers may have a different normative "set" based on lower expectations for their pupils. In addition, the authors believe that the variability in teacher performance indicates a lack of stable frame of reference for "grade level," a finding that may affect reading instruction.

Brekke and Williams (52) compared the ability of 2 kindergarten teachers against scores on standardized instruments to rate the reading readiness potential of their pupils. A group of 63 first graders (male = 33; female = 30) in 2 Grand Forks, North Dakota, classrooms were administered the *Gates-MacGinitie Reading Tests:* Readiness Skills and the *SRA Primary Mental Abilities Test:* Grades K-1. The children had been rated at the end of their kindergarten by the 2 teachers. Ratings were on a one to 4 scale, with 4 representing highest reading readiness. The positive and significant multiple correlation between reading readiness subtests and teachers' rating was .56. The zero-order correlation between the teachers' rating and mental age was .68. When mental age scores were partialled out from the correlations of teacher rating with each *Gates-MacGinitie* subtest, the readiness test appeared only minimally related to teacher ratings. Only Letter Recognition showed significant ($p < .05$) partial relationship. The findings indicated to the researchers that use of teacher ratings of reading readiness added little information to the mental age scores for the prediction of reading readiness.

Davis (100) analyzed the responses of 51 Indiana teachers in a questionnaire designed to determine what reading tests they administer and how results are used. The 28 per cent return response included teachers from kindergarten to grade 7. Respondents indicated use of 37 different tests, including reading achievement, diagnostic, basal reader, and intelligence tests. Seventy-one per cent of the tests were reported as hand-scored; 30 per cent of the respondents reported that results were used for diagnostic purposes; approximately 42 per cent indicated that test results were used for grouping pupils for reading or for determining appropriate performance tasks. Nineteen per cent stated that test results were used to select levels of material for reading. Evidence of inappropriate test usage led the author to make suggestions for change in test selection, interpretation, and instructional decisions.

Heintz (208) attempted to determine whether knowledge of a retarded pupil's socioeconomic status and sex influences experienced special class teachers' expectations of the ultimate academic achievement level in reading for that child at school-leaving age. A total of 72 special class teachers from a large Northeastern metropolitan area were included in the study. Each completed a form of a questionnaire designed to obtain a measure of teacher expectancy for the ultimate reading achievement level for a hypothetical mentally retarded child, described as being either from a high or low economic background, and as being either male or female. The questionnaire for each of the 4 experimental conditions was distributed randomly to the teachers. Teachers estimated the hypothetical child's probability of being able to read words taken from the *Wide Range Achievement Test* at the end of formal schooling. Responses were scored as grade equivalents according to the *WRAT* Manual. Analysis of variance revealed no statistically significant differences in teachers' expectations for retarded children who were described as either high or low socioeconomic levels or as male or female. However, there was much variation in teacher expectancy levels among individual special class teachers. More than half of the teachers believed that retarded pupils would not be able to achieve at a level expected on the basis of their mental age.

Mazurkiewicz (320) initially surveyed 118 experienced teachers (grades one through 6 enrolled in graduate classes in Spring, 1971, to determine their understanding of common terms used in reading instruction. Results indicated a low level of understanding of specified terms, *i.e.*, 53 per cent could list vowel letters but not define the term *vowel*. A followup study with this group of teachers was conducted to refine a questionnaire for use with a larger sample. This questionnaire was designed to obtain information on teachers' knowledge of numbers of vowels and consonants in the alphabet and language, and 3 frequently used long-vowel generalizations. A volunteer sample of 300 teachers from 26 school districts surrounding Kean College, New Jersey, and representing grades K-6 participated in the final study. Of the original sample, 252 teachers completed both the questionnaire and a phonic examination. They represented 57 different teacher-training institutions and one to 28 years experience. Analysis of results indicated that teachers generally know the number of consonants (94 per cent correct) and vowels (98 per cent correct) in the alphabet. Teachers appeared aware of the 3 long vowel generalizations, but to differing extents. Interview information supported the researcher's inference that teachers who did not use a generalization were not aware of its existence nor of the research on the utility of phonic generalizations. Teachers' indication of number of vowel sounds ranged from "five through hundreds." Almost 63 per cent indicated lack of knowledge of number of consonant sounds. A total of 45 questions on the multiple choice phonics test tapped functional knowledge of consonant and vowel sounds. Results indicated to the author that teachers have an inadequate knowledge of terms used in reading and exhibit a low level of phonic knowledge.

An inquiry into the attitudes of teachers of infants toward the international teaching alphabet (i.t.a.) was conducted by Weeks (530) through the use of a questionnaire that was submitted to a sample population of 228 teacher personnel in the Berkshire College school practice area of England. The questionnaire included a 10-item affective subject scale, a 30-item cognitive subject scale, and a 4-item basic attitude toward reading scale. Respondents were identified clearly as either users and potential users of i.t.a. or traditional orthography (T.O.). The chief aim of the inquiry was to compare attitudinal responses of the 2 groups on a variety of items relating to the use of i.t.a. Data were collected on approximately 60 per cent of the sample population. Among the findings was that older teachers using T.O. showed more feelings against i.t.a. than younger age teachers. About 10 per cent of T.O. users indicated that they were potential users of i.t.a. in comparison with 13 per cent of i.t.a. users who rejected i.t.a. in a future situation.

Reading practices in the open classroom were surveyed by Wiener (537) through the use of a questionnaire that was distributed to more than 500 teachers of Long Island, New York. The author-prepared questionnaire included 28 multiple choice and open-ended items that referred to classroom organization, reading programs, teachers' attitudes toward open education, and preparation for teaching in an open classroom. Also, 20 randomly selected open classrooms were visited to validate questionnaire responses. Data were collected from 280 respondents. Among the many detailed findings, only 25 per cent of the open classroom teachers were found to use basal readers as the major approach to teaching reading. Sixty-eight per cent of the respondents described their programs as ones based on individualized materials. Reading kits, such as SRA, were used by 78 per cent of the reporting teachers; and 73 per cent used workbooks. In 57 per cent of the open classrooms, materials were student-selected with teacher guidance. Fixed reading ability groups of high, middle, and low achievers as a pattern of organization for instructional purposes were found in only 8 per cent of the open classrooms.

Quirk, Trismen, Nalin, and Weinberg (390) attempted to explore how teachers in compensatory reading classes distributed their time. A questionnaire survey (Spring, 1972) was used to obtain descriptions of the instructional characteristics of compensatory reading programs offered in grades 2, 4, and 6 of U.S. public schools; of the schools in which these programs were offered; and of the instructional personnel who staffed these programs. A final sample of 156 reading classes (34 schools in 21 cities) was selected for observation from a subsample of approximately 250 schools and a small group of compensatory reading programs which were considered innovative by reading educators. The schools were selected to obtain a wide variety of instructional characteristics in the reading programs. In each school, the specific reading classes observed were randomly selected within each grade level or by some adaptation of this procedure which permitted observation of different teachers within each grade level. A Teacher Observation Scale developed specifically for the study of reading instruction in elementary school classes was designed to describe the major types of interaction that were expected to take place during reading instruction. From observations of a number of reading classes during the developmental phase of this project and from analysis of a log of teacher and student actions during reading instruction, instruction was categorized as: 1) Mode, and 2) Content. Trained observers with stopwatches coded teacher behavior at 10-second intervals. After each interval, the observer decided which one of 5 Mode Categories and which one of 11 Content Categories represented teacher behavior. A total of 46 observers were trained in 6 one-week training sessions to use the Teacher Observation Scale. Forty-five of the 46 observers were found reliable and were used in the study. Each of 76 grade 2 classes, 47 grade 4 classes, and 33 grade 6 classes were observed on 9 separate days for 15 minutes each day for a total of 2 and one-quarter hours of coding in each class. The results of the Mode of Instruction indicated that teachers were talking 45 per cent of the time, teachers were paying attention to pupils talking 27 per cent of the time, no one was talking 25 per cent of the time, and teachers were paying attention to machines less than 2 per cent of the time. In terms of Content of Instruction, teachers spent more time in management (30 per cent), followed by specific reading instruction in Pronunciation and Word Recognition (26 per cent), Comprehension (12 per cent), Spelling (9 per cent), and Non-reading Instruction (4 per cent).

Schnell (436) surveyed a random sample of 75 members of the International Reading Association's Special Interest Group for Two Year Colleges to determine the extent of educational experience and need for change in preparation of reading teachers for the community college. From the 47 valid returns, representing 62 per cent of the sample, Schnell produced a modal profile of the educational background and teaching experience of the community college reading teacher: The "average" teacher is female (76 per cent), 45 or older (49.6 per cent), holds a masters degree (99.9 per cent), has 8 or more years teaching experience (82 per cent), teaches both reading classes and laboratory sessions (51 per cent), and works with 100 students or fewer per semester (63 per cent). Forty-eight per cent rated their preparatory training as "adequate" and believed that on-the-job experience is more valuable than formal coursework. Most frequently suggested as needed coursework included psychology-counseling, content area reading, study skills, inservice workshop methodology, internships with experienced practitioners, and language-psycholinguistics. Schnell suggests his findings have implications for teacher educators in planning curriculum changes.

Three hundred future English teachers were subjects in a study by Cline (79) to ascertain their attitudes toward reading. It was reported that although nearly 97 per cent of the subjects had average to superior reading ability, their attitudes toward reading varied sharply with many considering reading a chore. This conclusion was based on analyses of reading autobiographies of 50 selected subjects.

Brooks (57) categorized 268 weekly reports on course-related outside reading completed by junior and senior students enrolled in a secondary social studies methods course. Sources for readings in earth science, geography, and education were introduced to the students. Reported readings were in journals, books, newspapers, pamphlets, and yearbooks. Journals were subdivided to include: 1) professional journals presenting high quality research, 2) educational journals presenting theory and practice, 3) professional-educational journals combining content areas and education; and 4) layman journals available on newsstands. There were 113 different sources consulted, of which 23 per cent were professional-educational journals. A total of 38 books (or 33.6 per cent) were critiqued, leading the researcher to conclude that 53.6 per cent of the sources used could be considered excellent sources of knowledge. In addition, 60.8 per cent of the reports were from the significant source journals. Students also drew heavily from a few layman journals. Relatively few reports (3.1 per cent) were from government documents or yearbooks. Nearly 10 per cent of the total reports came from newspapers. The author considered lay journals and newspapers as less appropriate for the professional.

Rubin (418) surveyed a group of 19 professional personnel from an inner-city high school with a largely black population. The personnel volunteered to attend a 4-session inservice program concerned with reading skills and a learning-to-learn program. Subjects responded to a preliminary questionnaire concerned with their attitudes toward the dropout problem, its relation to reading, and subjects' feelings of adequacy in dealing with the area of reading. In addition, subjects checked factors they believed to be contributory to reading problems. The post-questionnaire was designed to gather feedback about the inservice program. Additional pretest and post test data were collected to assess knowledge gained from inservice sessions. Subjects indicated dropouts are due to reading problems, as well as to lack of interest and both motivational and economic problems. While all respondents indicated their students exhibited reading problems and the majority described them as "severe" or "very severe," 73.5 per cent indicated that their students wanted to learn and 48 per cent felt inservice training in techniques of learning, vocabulary development, comprehension, and concentration skills would help them to help students. Subjects scored significantly higher ($p < .001$) on both parts of the post test, *i.e.*, Combining Forms and Vocabulary.

Veldman and Brophy (513) investigated teacher stability in producing student learning gains with a sample of 115 second and third grade female teachers in a large Southwestern urban school system. Teachers selected for inclusion were those who had 5 years or more teaching experience at their grade level, had taught the same level during the years 1967-69, and had complete data on at least 14 children. Four teacher groups were formed on the basis of grade level and pupils' socioeconomic status: 1) Grade 2, Title I (N = 21); 2) Grade 2, non-Title I (N = 35); 3) Grade 3, Title I (N = 20); and 4) Grade 3, non-Title I (N = 39). Grade equivalent scores were obtained from the *Metropolitan Achievement Test* (MAT) subscales for each of 4 successive years of regular fall achievement testing. To explore the influences on predictive efficiency, a series of regression models were compared, using pretest, squared pretest, pupil sex, year of testing, and teacher as predictors of post test performance. Inclusion of squared score and of pupil sex added little to predictive efficiency. Systematic differences among the 3 years of testing were trivial. Inclusion of the teacher variable usually yielded a substantial and significant increase in predictive efficiency. However, pupil prescores were usually the strongest predictors. Influences of sex, year, and teacher appeared to be stronger in Title I than in non-Title I schools. Teacher impact was stronger in Grade 3 than in Grade 2 in Title I schools but about equal in non-Title I schools. Predictability of post test scores was generally greater in Grade 3 than in Grade 2, in non-Title I than in Title I schools, and on verbal than on quantitative measures. The degree to which individual teachers' influence on child gain was consistent across years—and hence, across classes—was determined. Residual gain scores for all pupils were computed, using only simple pretest scores as covariates. Average residual gains for each teacher for each of her 3 classes were used to compute intraclass correlations. With the exception of those of Grade 2, Title I, coefficients were generally statistically significant and appeared to be reliable estimates of teacher impact on student learning.

An evaluation of a clinical, interdisciplinary team approach for the identification and treatment of children with potential learning disabilities related to reading was conducted by Morgan (344). From an elementary school community enrollment of 475, 52 children who were to enter first grade the following year were divided into 2 groups based on scores achieved on the *First Grade Screen Test* (FGST). A 52-subject control group was drawn from a neighboring community and matched with pupils in the experimental concentrated (N = 24) and experimental normal group (N = 28) on the basis of FGST scores. During the second year of the study, the children were administered the *Metropolitan Readiness Test* at the beginning of first grade and the *Metropolitan Achievement Test* in May. Analysis of covariance was used to test for differences among scores of pretests and post tests for the experimental and control groups. Subjective ratings were used to assess teacher performance and effectiveness. During the year, teachers of the children in the experimental concentrated sample group had access to all information supplied by members of the professional team (including a psychiatrist, pediatrician, social worker, remedial reading teacher-counselor, school nurse, and a speech therapist). Pupils in the concentrated sample group (both experimental and control) were evenly distributed among participating teachers. Teachers in the control group were not aware that the pupils were being studied. Children in the experimental concentrated sample group made statistically significant gains over the control concentrated sample and over the experimental normal group. Teachers in the control group received slightly higher principal ratings. Results suggested that teachers who have information provided by a clinical team on children identified as having potential learning difficulties can utilize the information to aid those children to achieve greater success in reading.

To examine the influence of teacher verbal behavior on attitudes and reading performances of below-average achievers, Samph (427) identified a sample of 155 sixth graders who scored 2 or more grades below their normal level on the *Metropolitan Achievement Test* (MAT). The subjects were grouped according to teacher verbal patterns measured by Flanders' system of interaction. Student performances were compared on pretest and post test results on the Language Section of MAT and on the *Pupil Attitude Inventory*. Seven months elapsed between the administration of pre- and post-measures. Analysis of covariance was used, co-varying on pre-achievement, with the outcome favoring the group taught by teachers who showed more frequent behaviors allowing for student freedom of expression, such as praise and use of student ideas.

Alpert (8) investigated the verbal and nonverbal behavior of 15 New York City Catholic school second grade teachers with top and bottom reading groups to determine the amount of "good" behavior directed toward each group. "Good" behaviors were defined by a group of reading specialists as those likely to increase pupils' reading performance. They included: a) more reading group time; b) best reading group time (teacher self-report of time she felt most motivated to teach); c) more materials in reading group; d) fewer pupils in reading group; and e) frequency of 20 identified "good" verbal behaviors. The 20 teacher verbal behaviors were developed from responses of 36 teachers and specialists who identified behaviors likely to increase pupil performance from actual tape-recorded lessons. Data were collected in 3 sessions over a 4-week period. Data collectors and subjects were kept naive as to the actual purpose of the study. Data for non-verbal behavior were coded from forms completed by 15 data collectors; data for verbal behavior were coded from tape recordings of observed sessions. Sums across the 3 data collection sessions were obtained for each teacher for each ability group. Differences between means were compared by way of the correlated t-test. Average group size was determined by teachers' rosters. Results showed that significantly fewer pupils were placed in the bottom (M = 8.87) than in the top reading group (M = 13.87). Although direction of difference for the 4 remaining good behaviors indicated preferential treatment to the bottom group, none of these differences was significant. No significant difference was apparent in the amount of good verbal behaviors, indicating that the teachers treated the 2 groups equally.

Barter (24) compared the performances of 30 Reading Methods students (Black = 27; Anglo = 3) on the *Co-operative English Test* (CET), Form 1B, Reading, with their overall performance on the *National Teachers Examination* (NTE). Each of 59 subjects took the CET at the outset of the spring semester, 1972. By May, 1973, data were complete for 30 students including NTE scores from at least one administration. Statistical analysis was limited to composite scores on only the first trial for students who needed more than one trial to pass the exam. Thirteen variables were tested for significance, including course grade, cumulative grade point average (GPA), race, NTE results, and CTE subtest and total test results. Comparison with reading test norms showed that the total and final sample group placed below the lower quartile of college sophomores. Product-moment coefficients of correlation between each of the 13 variables produced significant intercorrelations for all but 3 comparisons. Results indicated that peformance on the NTE was closely related to student reading ability; a stong relationship was evident between GPA and passing/failing the NTE. There was a significant but not so strong relationship between a students' passing or failing the NTE and his reading abilities, his GPA and his reading abilities, and the GPA and his course grade. Of the 13 variables, race showed the weakest relationship. The author concluded that students preparing to be elementary teachers may not be competent readers themselves and that comparatively poor readers could attain GPA and course grades of 2.0 or higher.

Johnson, Phillips, and Sublett (242) surveyed 80 predominantly black institutions of higher education throughout the United States to obtain a status report relating to the types and varieties of undergraduate reading course offerings. The return rate was 36 (45 per cent). The inventory was comprised of questions concerned with 5 categories: 1) types of undergraduate reading courses offered; 2) main emphasis within each course; 3) number of semester hours given for the basic courses; 4) features of the current program regarded as substantial improvements over former programs; and 5) further improvements needed. Of the 16 states and the District of Columbia represented among the respondents, 78 per cent offered a basic and inclusive course. Forty-four per cent offered an average of 2 additional courses beyond the basic one. Of these additional courses, major content emphasis ranged from 53 per cent on reading improvement, 50 per cent on remedial reading to 3 per cent on issues in reading and reading in early childhood. Credit for the basic course averaged 3 semester hours. Eleven per cent required it for all undergraduates; 64 per cent required it for only elementary majors; 3 per cent required it only for junior high; and no institution had a required course for senior high school majors. Eighty per cent of those responding included developmental reading techniques and content area reading in the topics of the basic course; 70 per cent included corrective or remedial reading and psychological aspects of reading. Respondents generally agreed the reading program had improved considerably over the past decade but that more stress should be placed on implications of reading research.

Galassi, Gall, Dunning, and Banks (164) compared the effectiveness of 2 models for changing the questioning behaviors of a sample of 56 California intermediate grade and junior high teachers. Teachers were randomly assigned to either videotaped or written transcription versions of the training program materials. For the purposes of the data analysis, teachers of grades 4 through 6 (elementary) and teachers of grade 7 (junior high) were treated as separate groups. A third group of 24 teachers from the same districts served as the control. All 3 groups were pretested and post tested for categories of questions which they asked in an audiotaped lesson developed from a standard stimulus article or story. Audiotapes were scored for the following variables: percentage of higher cognitive questions asked, number of probing and refocusing questions, and number and length of student responses. Mean percentage of higher cognitive questions asked showed gain for both experimental groups, whereas control teachers indicated decrements. Analysis of covariance, with the pretest percentage of higher cognitive questions as the covariate, revealed a significant difference ($p < .05$) among the 3 groups for the seventh grade sample. Both video- and written-group teachers asked a significantly higher percentage of thought questions after training than did control teachers. However, video and written treatments did not differ significantly from each other. For the intermediate grade teachers, analysis of variance for a 2-factor mixed design with repeated measures on one factor yielded a significant trial by treatment interaction (.001), with experimental groups emitting a greater percentage of higher cognitive questions regardless of mode of modeling. Analysis of covariance revealed that significant differences in number of post course probing questions occurred only in the intermediate sample, while no significant difference in use of refocusing questions between the 3 groups occurred at any level. Significant differences were present at both the elementary (.005) and junior high levels (.05) in the number of post course higher cognitive responses given by pupils in the 3 groups. Pupils in the written group significantly outperformed control group students in both elementary and junior high samples. Only the elementary school pupils of videotaped trained teachers emitted significantly higher cognitive responses than their control group counterparts, while the junior high pupils of written-trained teachers significantly outperformed the pupils of video-trained teachers. With the exception of the seventh grade written group, there were only slight increases in the mean length of higher cognitive responses from pre- to post-tape. This finding, according to the authors, may have been a result of teachers eliciting both more long and short responses in the post course taping. The written version of the inservice program appeared to be as effective as the video version on specified variables.

III. *Sociology of Reading*

As in past years most of the research in this section has been completed by researchers in fields other than reading, especially by those interested in journalism and communication.

III-1 Use of mass media

Smith (463) related the use of mass media as a means of interaction among children to the measured IQ's of Aberdeen, Scotland, children from 11 to 16 years of age. Within each age group, there was a tendency for children with higher IQ's to report greater use of mass media than other children. As children became older, there was a tendency for the responses to polarize either towards high or low use, but the differences reached significance for only the 15-16 age group. Two age groups, the 13-14 year olds and the 15-16 year olds, were the subjects for the part of the study concerned with the use of media as a basis for interaction and interpersonal relations. For the high IQ subjects in both groups, the reported use of mass media as a basis for interaction was related at a statistically significant level with peer orientation and with behavior with peers. No similar relationship was found for low IQ children at any age.

The relationship between the extent of mass media usage and the subjects' perceptions of how well informed they considered themselves to be about 8 environmental problems and their solutions was investigated by Novic and Sandman (358). The college subjects were asked to check from a list of 10 sources the 3 which had provided them with the most information about environmental problems, to indicate how well informed they were, to rate how serious the issues were, and to select the one best solution to the problem from 3 which were given. The subjects were divided roughly into 2 groups: the light and the heavy media users. The heavy as contrasted with the light users considered themselves less well informed on environmental issues, viewed the issues as less serious, and preferred less personal solutions to them. No significant relationship was found between how serious subjects considered the issues and the kinds of solutions they chose, irrespective of media use. The investigators gave several reasons that their findings should be considered as preliminary ones.

Perceptions of media credibility among students from seventh grade through college were explored by Baxter and Bittner (25). In interviews the 405 subjects were asked to state which of 5 sources (radio, television, newspapers, magazines, and other people) they would be most inclined to believe if they had received conflicting or different reports of the same news story. For the total group, the data showed that television was the most credible medium, followed in order by magazines, newspapers, other people, and radio. No significant differences were found between the junior high school and the college samples nor between male and female subjects concerning their perceptions of media credibility.

As a part of a larger study, Clotfelter and Peters (80) conducted personal interviews with 153 active-duty United States Army officers and asked how fairly they believed the military had been treated by television news, television programs, newspapers, and news magazines. They rated each on a 5-point Likert-type scale. The most common evaluation given was in the "mixed" category; television was evaluated most negatively, while news magazines were rated the most positively.

The experiment reported by Dommermuth (114) compared television, motion pictures, radio, and print in regard to their effectiveness and their influence upon audience perception of the presentation and of the communicator. The media were analyzed as to whether they were "hot" (a medium that extends one single sense as radio, motion pictures, print, and are low in audience participation) or "cold" (as the telephone or television and are high in audience participation) as proposed in earlier studies by McLuhan. The basis of the experiment was a film in which a professor advocated that education should be aimed primarily at intellectual discipline. Four groups received the message in different media. The first group saw and heard the film on television; the second, as a motion picture; the third heard the sound track simulating a radio presentation; the fourth read the script in print form. All subjects rated the communicator and the presentation on semantic differential scales and were tested on the retention of the content of the message and the degree of agreement with the points-of-view advocated in the communication. Prior to the presentation they had been pretested as to their degree of agreement with the ideas presented. Among the findings related to the sociology of reading are the following: The television, motion picture, and sound versions were significantly "colder" than print on ratings of the total presentation. No significant differences were found in the subjects' retention in any of the media. Print and sound were more effective than television and motion pictures in persuasiveness. The change in opinion scores was significantly higher for sound and print than for television. In general, however, the study did not support the concept of "hot" and "cold" or the view that any medium is superior in all ways to another.

Six different respondent groups were interviewed by Tipton, Haney, and Baseheart (502) during the gubernatorial and mayoral campaigns and were asked to state what they thought were the 2 or 3 major issues facing the voters in each campaign. Concurrently, the actual content of the media coverage of the campaigns was coded. Stories from 3 newspapers, 2 evening television news programs, and the hourly local radio broadcasts were analyzed. Nine categories were established for classifying respondent and media references to the issues. The coefficients of correlation between the frequency of the number of times that issues were mentioned by the 6 groups were high for both elections. Media coverage for the entire period was compared with the frequency of mention by the various groups. The relationships with newspapers was statistically significant, but there was no significant relationship with television or radio coverage. When respondents in some of the groups were asked to state the medium from which they had obtained most of their information, 47 per cent stated newspapers, 36 per cent, television, and 6 per cent, radio.

Tichenor, Rodenkirchen, Olien, and Donohue (498) were interested in determining if any relationship could be found among mass media input, community structure, and social tension. They reasoned that issues were usually created in either professional groups or political institutions, not in mass media. Nine hypotheses were tested by means of personal interviews in 15 community areas in Minnesota; the communities were combined in 4 groups with one or more local or regional issues being common in each group. All issues involved conflict of ideas; all had direct implications in one of the communities in each group and had arisen partly as a result of action by governmental agencies; and all involved public decisions. Mass media availability and use varied sharply among the community areas. When the hypotheses were tested, several pertinent findings resulted: When the level of mass media coverage increased, the level of knowledge on the community issue did not become higher as had been hypothesized. The investigators concluded that other factors in addition to the media are responsible for disseminating information within a community. Higher levels of mass media coverage of community issues resulted in a higher perception of conflict regarding the issue. When the level of mass media coverage increased and when social conflict was higher, there was no increasing gap of knowledge between persons of low and high socioeconomic status when formal education was used as an indicator of this status. When the level of perception of the conflict was high, the interpersonal communication and the level of knowledge about the issue—as well as the perception of conflict—were high.

The results of the study by Grass and Wallace (181) suggested that television more effectively communicated an advertising message than print for consumer products. Full-page ads were prepared containing the same format and information used in television ads that were no longer being shown. The purpose was to produce a print ad which would present the same creative theme, appeals, and consumer benefits as the one from television did. When subjects were alerted to and tried to learn from the ads, both kinds of advertisements taught them the same things. When under simulated, natural, unmotivated conditions of reading and viewing, the subjects remembered 81 per cent of the facts from television commercials and 56 per cent from the print ads. The results suggested that the difference in the performance of television and print media as communication vehicles was due to the different attention characteristics associated with each medium.

The relationships of various aspects of mass media and the Chicano movement in Southwestern United States were delineated by Lewels (283). Of special interest is the information given concerning the Chicano press. Traditionally, the Mexican-American population has had little regard for and has not been served by the Anglo press nor by the early Spanish-language newspapers. Currently, the Spanish-language dailies have included reports of events rather than discussions of the problems of Mexican-Americans; they serve only Spanish-speaking people and not an entire population. Daily newspapers provide little news coverage of Mexican-Americans even today except when Chicanos have been involved in crimes or accidents. As the Chicano movement grew, access to the mass media was essential. Surveys show that this group of people would like more stories about the Mexican-American community, more Mexican-American reporters, listings of job opportunities, creation of a Chicano section, and expanded photographic and reporting coverage. One of the major problems has been the stereotyped image of the Chicanos perpetuated in each of the media. As a result, Chicano youth have had no positive images to imitate. Chicano leaders began their attack on the media in 1968 because of the exploitation of and the insensitivity toward the Mexican-Americans. Conferences have been held in different parts of the United States to further the best interests of the Chicano movement. Detailed information concerning the broadcasting media was included.

The role of mass media in rural Jordan was explored by Barghouti (18) to determine if the media were a source of information which enlightened citizens concerning political and agricultural issues. Personal interviews in Arabic were conducted with 172 illiterate and 140 literate farmers in 23 villages. Six variables were analyzed in the study. Political knowledge and agricultural knowledge were measured by the numbers of correct answers to questions given on each topic. Content analysis of mass media (one radio and one television station and one of the 3 daily newspapers published in Jordan) revealed that the media had established themselves as sources of political information. Radio was the medium most used; exposure to television and print media was not common among the subjects in the sample. Exposure to any of the 3 media channels was more significantly related to political than to agricultural knowledge. Virtually little difference was found between the subsample of literate and illiterate subjects on radio exposure, television exposure, political knowledge, and contacts with sources of agricultural information. However, literate farmers differed significantly from the illiterate ones in their exposure to print media, agricultural knowledge, and adoption of agricultural innovations. To Barghouti, the results suggested that mass media could contribute more to Jordan's rural development if they carried more information on agricultural issues.

The relationships among the mass media, ethnicity, and political change in Yugoslavia were the concerns of Robinson (404). Two theoretical models were considered in order to learn if either one or both held true in Yugoslavia. The most prevalent model adheres to the idea that modernization neutralizes ethnic, racial, religious, or tribal politics and that media contribute to the process. A counter model proposes that as new ideas are introduced, conflict arises; as a result, increased competitiveness encourages people, especially urban newcomers, to fall back on ethnic ties. Robinson concluded that the second model held true in Yugoslavia. Evidence was presented of modernization occurring in Yugoslavia. Television and radio devoted 41 and 42 per cent of air time to information and culture / education programs; newspapers used 60 per cent of the space for the same kind of content. The content distribution was due to the fact that the readers and listeners, not the state, support the media and because radio stations and newspapers are self-managed cooperatives. To determine if mass media contribute to modernizing and universalizing, the Slovenes were studied. They have the highest potential exposure to mass media according to press, radio, and television statistics and should exhibit the most modern outlook and set of values. However, attitudinal data concerning belief and value systems collected by the Belgrade Centre for Public Opinion Research showed that Slovenes clung to a strongly particularist value structure. Robinson reasoned that the lack of attitudinal change reflected a fear of losing their identity in the larger union of Yugoslavian states and concluded through various kinds of evidence that the mass media tended to reinforce ethnic attitudes rather than dissolve them in more universal, less parochial values.

In an extensive study, Edelstein (130) compared the use of mass media in Belgrade and Ljubljana, Yugoslavia cities in a socialistic country, with that in Seattle in a democratic country. Only selected findings from the large number reported in the book can be given here. The subjects were asked to state problems facing the city in which they lived, to delineate which problem was most important to them personally, and to state why it was important, where they learned about the problem, and what should be done to solve the problem. Prior to the interviews, the investigator established that there was in the 3 cultures a high degree of availability of all media (press, television, radio, film, and library resources). Seattle named the most local and world problems and proposed the most solutions to local problems, but there was little difference across the cultures in the solutions provided for world problems. Seattle reported television, radio, and the press more as sources of local information, followed in each case by Belgrade and then by Ljubljana. The press was the most useful source of information for both local and world problems in each city, followed by television; radio was least valued. In general, there was substantially more use of the press and television than of other media as sources of information. Seattle did not use media differently for world problems than for local problems, but Belgrade and Ljubljana reported substantially greater media utilization for world problems than for local problems. Greater use was made of media in Seattle for decision-making for local problems than in the 2 Yugoslavian cities. In all 3 cities, those subjects with more solutions to world problems were more likely to have used several sources of information. Having multiple sources of information was associated with having knowledge about problems.

III-2 Content analysis of printed sources

More investigations using content analysis were located than for any other category. The most popular topics for analysis were newspaper coverage of political campaigns and elections, sexism, and racism.

The relationship between public opinion poll news for the 1970 gubernatorial and senatorial campaigns and newspaper endorsements of candidates was analyzed by Wilhoit and Auh (539). They divided their sample of newspapers into 2 main categories: newspapers endorsing candidates and publishing opinion polls about them and non-committed papers that published polls about the candidates. In addition, the first category was subdivided into the newspapers whose editorial position was not opposed by other papers and those in which editorial opposition between the 2 largest newspapers in the same state was present. Sentences were considered favorable 1) if they placed the candidate in an advantageous position in regard to the outcome of the election, to the groups favoring him, and to socially approved objectives or values; or 2) if the statement contained a positive evaluation or personal virtue of the candidate or presented his position on an issue in conjunction with a favorable evaluation of the issue. Unfavorable statements contained ideas contrary to the foregoing; neutral statements contained neither favorable nor unfavorable statements. When a favorable sentence was balanced by an unfavorable one, the combination was judged neutral. A significant relationship was found between newspaper endorsement of candidates and favorable opinion poll coverage about them. The foregoing relationship disappeared when 2 newspapers from the same state endorsed different candidates. Contrary to the expectations of the investigators, neutral papers treated with greater disparity 2 political candidates contending for the same office than did editorially-committed papers. They concluded that the optimal condition leading to the least amount of bias about political candidates in public opinion polls was the newspaper commitment to a candidate when there was editorial opposition between competing newspapers.

Manheim (311) analyzed press coverage of the 1970 congressional campaign to ascertain if the quality and quantity of coverage would vary systematically with the degree of urbanization of the congressional district. More than 1,500 issues of the 25 newspapers in 5 Midwestern districts were analyzed during a 12-week period. Four categories provided the base for Manheim's analysis: prominence of placement, presence and quality of graphics, quality of headlines, and total space measured in column inches referencing the candidate. The newspapers in the urbanized districts consistently scored lower on the various headline measures (size, references to candidate in headline or subhead) than did those in the more rural districts. The urbanized districts showed a definite superiority in the use of graphics. Although the rural press did not include so many visual aids as the urban press, the items which were used tended to be more candidate-oriented. No systematic differences were noticed among the papers in regard to the prominence of article placement. For the assessment of relative quantitative treatment, Manheim identified and coded any article which dealt with any campaign news. He found that the newspapers in predominantly rural areas carried more congressional campaign news than papers in more urbanized areas.

Evarts and Stemple (142) found little evidence of bias when they analyzed the television, news magazine, and newspaper coverage of the 1972 presidential campaign. They analyzed sentences as positive, negative, or neutral with regard to the treatment of the candidates and political parties. In considering whether or not coverage was biased, they observed 3 factors: imbalance or one side being favored decidedly, order or proportion of coverage favoring each party, and the use of attributed vs. unattributed sentences. Although there were differences in the treatment within each medium, the only indication of bias that was found in this study was a slight pro-Republican bias of the news magazines.

Myers (350) analyzed editorials in 10 leading newspapers in the United States to ascertain the amount and partisan direction of editorial space devoted to foreign affairs and the 1972 presidential election. He also analyzed, through a case study approach, which foreign policy issues were discussed and how they were treated in each of the newspapers. Although more newspapers favored the Republican candidate, more editorials were written for the Democratic candidate: 45 per cent were Democratic, 15.4 per cent Republican, and 39.6 per cent neutral. For all newspapers, 26.5 per cent of the editorials were entirely concerned with foreign policy matters. Although different foreign policy issues were discussed, the Vietnam war situation and foreign policy in general were the most popular topics. The newspapers emphasized the desirability of ending the Vietnam war, but most did not find the proposals of the Democratic candidate desirable.

Based upon a content analysis of 7 newspapers during the 1972 Canadian federal election, Wagenberg and Soderlund (516) concluded that chain ownership did not result in any collusion by editorialists within the Free Press chain to stress any issues or to promote the welfare of any political party. Editorials appearing in these newspapers and in independent newspapers of a control group were studied. If they dealt with a federal election theme (economic, political leaders, foreign policy, nationalism, environmental, political, socio-cultural, or miscellaneous themes), they were coded for content and partisanship. No consistent pattern united the papers in the chain, nor were persistent differences found between them and those in the control group. Instead, the region in which the newspaper was situated appeared to be more influential.

In her content analysis of news photos in 2 metropolitan newspapers, Miller (337) found that the pictures of men far outnumbered those of women, approximately 3 to 1, except for those found in the lifestyle sections, where almost one-half of the photographs of women were found. She classified 2,168 photographs of one newspaper and 1,493 in the other into 10 categories, such as professional, sports figure, human interest. The categories of politician / public official, professional, sports figure, entertainer, and criminal were dominated by men; but the roles of spouse and "other" (primarily fashion models) were dominated by women. The overall photo coverage of the 2 newspapers was similar, with the differences appearing to result more from differences in the nature of the communities served than from different editorial policies. Miller concluded that the portrayal of women's roles through photographs did not reflect the roles occupied by women in the 2 communities served by the newspapers studied, nor did it reflect the impact of changes in women's roles on economic and social factors.

Content differences of traditional women's pages and redesigned updated sections in metropolitan newspapers were analyzed by Guenin (190). "Traditional content" included such categories as advice, beauty, and clubs; whereas, "suggested content" as stated from various critics included consumer news, community improvement, employment, and the like. The results of the comparison revealed that traditional content was much more extensive on the traditional women's pages than in the modernized sections. The redesigned sections included one-half or fewer of the 24 suggested topics with none having the scope of topics recommended by the critics. Traditional content appeared to be replaced largely by entertainment stories. Traditional pages covered topics other than the traditional ones at least as well as upgraded sections and included good feature content. Consumer news, the topic suggested most often by critics as one that should be thoroughly reported, was absent in all but one of the newspapers analyzed.

The content of international news in "rest day" editions of 3 Israeli newspapers and one American newspaper was analyzed by Hicks and Gordon (209). Friday editions of the Israeli papers and Sunday editions of the American paper were used. No significant difference was found between countries in 1) their news coverage in respect to their prominence in the news reported about them, 2) the amount of negative news reported about them, 3) the amount of straight news, and 4) the amount of elite-oriented news compared to that about common people. Also, no significant differences were found when looking for more foreign news of a positive nature than of a negative nature; more straight news than features, analytical articles, or editorials; and more news of big power nations than of smaller ones. Israeli papers used significantly more items originated by staff members than the American paper, which used primarily news agency reports.

Muller (346) analyzed the content of currently popular adolescent novels and compared his findings with those from a similar study published in 1967. He concluded that growing up was a common problem in the novels during both periods, but the problems that characters in the novels of the 2 periods faced were different. In the earlier period, the characters coped with such problems as dropping out of school and early marriage; but in the current period the characters faced problems that were frequently controversial, such as the violence of street life and drug abuse. In the earlier analysis, life was treated realistically in most of the novels, but traditional taboos of society were honored; in the current novels, activities which formerly were included only in adult books were described. Traditional values and standards were respected during both periods. The trend away from didacticism in the first study continued in the current period.

Hawkins (206) investigated 3 art education periodicals published in a 10-year period from 1962 to 1972 to determine what portion of the content was oriented towards technology. The articles were coded according to 6 categories. Eight of the 483 articles were classified in the category termed *technological concern*. The journal *Art in America* exhibited the greatest range of distribution among the

6 categories, from none in the methodological classification to 103 for the historiographic section. Although *School Arts* magazine had a more even distribution in the categories than did the other 2 magazines, a concentration on materials, methods, and processes was noted. None of the magazines examined showed increased attention to the relationship of technology to art. All 3 magazines emphasized the particular category which best represented the stated intent of the publication. Hawkins concluded that in art periodicals there was an apparent tendency to rely on historical, methodological, or philosophical views of art and society and to disregard the ramifications of advancing technology.

From 38 selected journals concerned with home economics, Montgomery and Ritchey (342) categorized 6,098 research articles according to subject matter areas within home economics. Of the reports examined, 9.2 per cent were written or cowritten by people in a college, school, or department of home economics. The categories of food and nutrition yielded 45 per cent of the articles. Less than one-tenth of one per cent related to housing and equipment. The remaining research reports were classified under the following headings: clothing, education, family relations and child development, foods, health and welfare, home management and family economics, and textiles. Considerable variation was noted in the number of articles found in each of the latter categories.

To determine if the adult educator could be informed of important concerns and issues by reading *Adult Education*, Long and Agyekum (295) analyzed the issues of this magazine from 1964 to 1973. The investigators classified each article according to types, content, number of articles based on dissertations or theses, contributors, and general trends. Quantified data revealed that 163 writers contributed 161 articles in the 9-year period. Issue size and article length generally increased. Although the median number of articles per issue decreased, the number of research articles generally increased. The 4 content categories accounting for the most articles were program planning and administration, instructional materials and methods, adult learning, and adult education as a field of study. The articles concerned with instructional materials and methods seemed to grow in sophistication during the 9-year period. The writers of the articles represented 54 American colleges and universities, 9 foreign universities and colleges, 12 public schools or state departments; the remainder were associated with ERIC, Civil Defense Staff College, Canadian Welfare Council, Educational Testing Service, and similar organizations. Of the total number of articles, 15.5 per cent were based on doctoral dissertations. The investigators concluded that since *Adult Education* reflected flexibility and ability to adjust to changing pressures, adult educators should find the journal useful in helping them keep abreast in the field. Both the content categories and the article types reflect changing interests among adult educators.

Smith and Levin (468) compared the contents of lovelorn advice columns in 1947 through 1951 and 1967 through 1971 to ascertain if the columns reflected changes in sex roles. In both time periods females constituted approximately 81 per cent of the correspondents. The variety of problems differed markedly between the 2 periods. Writers tended to shift their interests away from problems of dating in the earlier period to more general issues of family and friends in the latter. Recent advice was more likely to support the female and blame the male; the opposite was true in the earlier period.

An analysis of the sex roles portrayed in illustrative sentences in one of the modern unabridged dictionaries was reported upon by Gershuny (169). Examples were given of cultural cliches concerning men and women, negative images of women, and male-female rivalry. Gershuny found that the feminine gender was stereotyped in approximately 75 per cent of the illustrative sentences sampled, that masculine gender sentences appeared almost 3 times as often as feminine gender ones, and that masculine words outnumbered feminine words about 2 to one.

High school mathematics textbooks were analyzed by Rogers (411) to determine the extent of sexism found in verbal problems. Men outnumbered women and were represented in many more occupations than women. Men faced more strenuous tasks and were far more interested in financial matters than women, although women were represented as spenders. Male characters were active in sports, whereas female characters were not; men owned or drove a car, but women did not travel on their own initiative. The men were older than women and outdid women in many ways, although women held their own socially.

Four basic questions were asked by Jay and Schminke (235) to determine if sex bias was present in elementary school mathematics textbooks. Parents and students classified word problems, illustrations, general settings, and activities according to gender (masculine, feminine, either, neuter). Although many neutral settings were identified, there were more than twice as many items identified as masculine as compared to feminine. Materials relating to the second question (dealing with famous people featured in quantitative settings) and the third question (concerned with occupations in the same kind of setting) were analyzed by 2 female coders. Of the 49 important people cited, 46 were males and 3 were females; the latter were found in 2 of the 12 textbooks analyzed. From a total of 104 recorded occupations, 86 were associated with males and 18 with females. An attempt was made to identify unusual ways mathematics textbooks handled traditional roles. No genuine nonstereotyped ways were found, although 4 cases were considered to be borderline.

Hillman (214) compared male and female roles in 2 periods of children's literature, the 1930's and the mid 1960's to the mid 1970's. The differences within each time period as well as between the 2 time periods were explored in regard to the number of male and female characters, the diversity of occupational roles for each sex, and the differences of behaviors and emotions attributed to each sex. Sixty books from each time period were selected and read twice. During the first reading, Hillman listed the characters (male and female) and the occupations. During the second reading, she divided the books into 6 parts for the analysis of behaviors and emotions. From the first 5 pages in each part, she determined the presence of 17 different behaviors and emotions. In both periods, Hillman found more male than female characters (64.7 per cent for the early period and 61.2 per cent in the recent period) and a greater range of occupations for males than females (in the early period for males, 169 different occupations and for females, 30; in the later period, 150 male occupations and 39 female ones). Little change was noted in the behavior of male characters in the 2 periods; but in 6 categories of behavior, significant changes were depicted in female characters. In the recent period, female characters expressed more curiosity and anger and revealed less affiliation / dependence, excitement / anticipation, nurturance, and surprise than in the earlier period.

Schnell and Sweeney (437) analyzed 325 stories from the preprimer through sixth grade of the 1966 and 1971 editions of a basal series to determine if the latter date reflected any change in the roles, activities, and relative importance of male and female characters. The number of stories featuring girls decreased by 23 per cent. Fewer illustrations appeared in the 1971 edition with a 6 per cent decrease in those depicting boys and a 50 per cent decrease for girls. Adult males in stories outnumbered adult females by 6 to one in 1966 and by 20 to one in 1971. The long list of male occupations in the 1966 edition was increased in the 1971 edition, but the small number of traditional jobs for women remained approximately the same in both editions. Two theme categories, adventure / heroism and achievement / problem solving, comprised 71 per cent of all the stories featuring boys in the 1966 edition and 60 per cent in the 1971 edition. Girls were most often featured in school and home themes in both editions; the second largest category was that of adventure and rescue. In the third and sixth grade books of the 1971 edition, there was a trend for girl main characters to show initiative and ability and to be portrayed with a non-sexist emphasis. It was concluded that the 1971 series did not reflect a significant change from the 1966 series in the manner in which males and females were portrayed.

Trecker (503) concluded from her analysis of European and world history textbooks that history-making was largely an activity of males who have determined and influenced events. The inclusion of women to any noticeable extent was dependent upon their ability to fit into the male organization (such as important queens). Omissions of important events related to women in the analyzed history textbooks included women's suffrage; the names of leading feminists; the status of women in classical Greece; the role of women in such countries as the Soviet Union, China, Cuba, Israel, and Sweden; the impact of Maoism on women in China; the importance of the work of peasant women in the medieval period; and women's activities in revolutionary movements.

A preponderance of racist content was found in a CIBC analysis of 100 career education materials according to Kabak (248). This analysis is considered to be a companion to the study, "Women as Words and Images," which has been reviewed in a previous summary. Various patterns of stereotyping were found. Minorities were frequently shown performing useful tasks with white teachers looking over their shoulders; minority tasks in the materials leaned toward the technological, not the service side. The materials discussed the advantages and disadvantages of occupations solely in terms of salaries, fringe benefits, and workshifts but ignored harsher realities of unemployment, such as the competitive job market.

Children's literature on Chicano themes was analyzed by members of the Council on Interracial Books for Children (91). They developed a set of criteria and applied them to approximately 200 books. They found that most of the books were written by Anglo-Americans and that the books would have a negative effect on a

Chicano child's self-image. The books do not present an accurate view of Chicano culture or tradition; they are not relevant to Chicano experiences or interests. There is much evidence of stereotyping of the Chicano and Mexican people and their culture. In the majority of the books, the problems are not solved by Chicanos, who depend upon the Anglos for solutions. The sexism in the books does not reflect that of Chicano culture but of Anglo culture.

The staff of the Council on Interracial Books for Children (90) were requested by an educational agency to analyze the Distar program for cultural bias and treatment of minority groups. From their analyses, the staff concluded that the content of the program was both racist and sexist and that many of the stories exhibited such anti-human values as selfishness, competitiveness, and materialism. As in similar reports, the number of male characters greatly exceeds the number of female characters; girls are portrayed as passive; no recognition is given to woman's role in history. The staff found the treatment of blacks and native Americans to be offensive.

After a 2-day review of children's dictionaries published from 1944 to 1973, Schram (439) concluded they were racist because of the types of information omitted or included. Black and Third World people are seldom included in illustrations, especially in the older books; when included, minorities are used as "props" for different kinds of costumes. Editors of dictionaries, according to Schram, copy from other dictionaries. The remaining conclusions are like those found in other content analyses of children's books: the principal goal is to determine the amount of sexism in books.

In an analysis of a random selection of children's books, Wunderlich (553) found that 28 per cent included black Americans. She compared the findings of her analysis with a 1965 one done by Larrick, who found then that only .8 per cent of the children's books included black characters. Wunderlich noted in the current books a positive sensitivity toward minority groups, but she reported a weakness in the books when blacks were portrayed from a white point of view.

III-3 Readability and legibility of printed sources

The readability of newspaper want ads was assessed by Hirshoren, Hunt, and Davis (215) to determine their suitability for educable retarded adolescents. They applied the Lorge Formula for Predicting Readability to ads for positions in which the training and skills were minimal and for which many of the educable retarded teenagers would be qualified, such as for service station helper, bus boy, maid, messenger. The investigators found that a minimum of fifth to sixth grade reading ability was necessary for the reading of the want ads in this study. However, because of the telegraphic style and short sentence-like parts, the readability of these ads was probably underestimated by at least a grade or more.

The readability of social science textbooks used by college freshmen was compared to the reading achievement levels of a group of open admission college freshmen by Kurzman (274). He estimated the reading level of the textbooks by the following procedures: application of McLaughlin's Smog Formula to the textbooks; estimates of the reading levels of the books by 2 reading specialists, by the social science instructors, and by the students using the books; and an analysis by the social science instructors of other aspects of readability. The readability of the textbooks varied according to the Smog Formula from the thirteenth to the eighteenth grade levels. The coefficient of correlation was .69 between the social science teachers' estimates and the Smog Formula results. The social science teachers tended to rate the books as easier than the results of the formula indicated. The students did not consider their books to be as difficult as the reading teachers did, but the students had no criteria to use in making their estimates. Since the average reading level of the subjects in the study was found to be 10.4, it was concluded that without special aid from the instructor of the course, without special attention given to the improvement of the reading skills, and without a high degree of motivation on the part of the student, much frustration leading to many dropouts would result.

Miller (336) studied the predictive powers of the Flesch Reading Ease formula and the Bormuth Passage Level Machine Computation formula. Specifically, he was interested in the extent to which a cloze based formula could predict to a multiple choice based formula and the extent to which a multiple choice based formula could predict to a different cloze criterion test. Each formula was tested by criterion tests—one that was similar to and one that was different from the original in regard to the type of response-elicitation technique used. Selections from the *McCall-Crabbs Standard Test Lessons in Reading* and the 1967 *Miller-Coleman Readability Scale* were the cross validation criterion tests which were used. The Flesch and Bormuth distributions did not differ significantly from each other in their relation to the criteron score distributions on either measure. No significant differences were found between the 2 formulas in their abilities to predict within or across the response modes represented by the criterion sets used in the study.

Sissors (461) questioned whether young, college-educated readers preferred any particular style of newspaper design as reflected in front page makeup. The subjects were asked to choose which of 4 alternative designs they preferred, the front page designs ranging from extremely traditional to avant-garde-contemporary. In an interview situation, a paired comparison test consisting of 6 sets of front pages was shown to the subjects, who stated their preference. In rating the 2 traditional and 2 contemporary designs, the subjects in this study rated the 2 traditional designs first and fourth.

The major purpose of the study by Haskins and Flynne (204) was to determine if the typeface used for headlines on the women's page in a newspaper affected readership. Articles typical of those found on women's pages were inserted in an actual newspaper; 10 different versions varying only in headline typeface were prepared. In the first part of each interview, the subjects were asked to rate every page for attractiveness and reader interest and to rate the front page articles and the 5 women's page articles for reading interest. Each sub-sample of subjects saw headlines in different typefaces. In the second part of each interview, the subjects were asked to rate the 16 typeface image scales. The investigators found that the 2 typefaces (Coronet Light and Garamond Italic) used on women's pages were perceived as having feminine characteristics; the Spartan Black typeface, often used in sports pages, was perceived as having masculine characteristics. Others were perceived as being neutral. No difference in page reading interest was found between feminine and masculine versions of the same page. Similarly, there was no difference in individual item reading interest between the feminine and masculine versions for 4 of the 5 items printed. The major conclusion drawn was that the feminine or masculine quality has no effect on a woman's interest in reading the women's pages.

III-4 Reading interests, preferences, and habits

Johns (241) investigated the preferences of fourth, fifth, and sixth grade innercity subjects concerning settings, character, self concept, and group interactions similar to and different from their own environment. Five pairs of slides prepared from book illustrations and orally given descriptions of the settings were presented to the subjects to determine preferences for settings in stories. Five choices were presented to the subjects among descriptions of characters with positive and negative self concepts; and another 5 choices were presented among descriptions of characters in positive and negative group interactions. In addition to the foregoing, the relationships of grade, sex, and intelligence to the responses for settings, characters, and group interactions were analyzed. The results showed that innercity intermediate grade children preferred stories or books depicting middleclass settings, characters with positive self concepts, and characters in positive group settings. Reading preferences for settings and group interactions varied significantly with grade level. The younger children selected pleasant settings and positive group interactions more than older children. Only reading preferences for group interactions varied significantly with sex; girls chose positive group interactions while boys appeared to be neutral. No relationship was found between intelligence and any of the preference variables studied.

The poetry preferences of fourth, fifth, and sixth grade pupils in Pennsylvania, Florida, Texas, and Ohio were explored by Terry (495). The poems were recorded on cassette tapes so that all subjects could hear the poetry read by the same person. The children responded to each of the 113 poems over a period of 10 days by indicating on a 5-point scale how much they liked the poem, whether they wished to hear the poem again, and whether the poem could be one of their favorites. The 25 most popular and the 25 most disliked poems were analyzed to determine the characteristics that seemed to account for students' poetry preferences. In addition, teachers were surveyed in regard to their preferences and manner of teaching poetry. The most popular forms of poetry among students were the limerick and the narrative; the most unpopular form was the haiku. The 3 elements which tended to influence children's choices were rhyme, rhythm, and sound; imagery was the least preferred element. They liked best humorous poems, familiar content, animals, contemporary poems, and poems that were already familiar to them. They disliked poems which were difficult to understand and ones that were sentimental or serious. Fourth, fifth, and sixth grade children appeared to prefer the same poems, but their preferences tended to differ in degrees. Although significant differences in preferences for certain poems were found between boys and girls, in most instances their choices were similar with differences being more in degree of liking than in the individual poems preferred. Innercity children showed a higher rate of preferences for the poems in the survey than did metropolitan, rural, and suburban children. No significant relationships were found between the familiarity with regional content and their preferences. The teacher and student preferences did not always agree, although the poems that teachers chose as their favorites tended to be popular with students as well. Terry concluded that since the results of her study were similar to past preference studies, children's poetry choices have remained rather stable and consistent throughout the years.

Newspaper audience interest in reading a syndicated-type newspaper column concerned with anthropology was explored by Allen (6). The subjects were given booklets in which titles and subtitles (heads and brief summaries or leads) were shown. Six of the titles represented anthropology, and 3 titles from 3 different authors represented each of 4 other categories (sports, general interest, political comment, and social comment). The subjects indicated their degree of interest in reading each by using a 0 to 100 degree thermometer type scale. Much similarity in the interest ratings was found across titles and categories. The rank order of the 6 subdivisions within anthropology were linguistics, physical anthropology, ethnology, ethnography, social anthropology, and archaeology. Allen stated that the 2 basic assumptions about media anthropology had been supported: Newspaper readers found information which anthropologists explore interesting enough to read, and the newspaper column was a workable column in which to communicate it.

III-5 Professional reading of teachers

When Cogan (81) analyzed the data from his survey of the professional reading habits of elementary school teachers, he found that they did little reading. They concentrated upon educational periodicals of a pragmatic nature with the 3 highest-ranking periodicals being the *Instructor*, *Teacher*, and *Today's Education*. Teacher readership was related to the number of school subscriptions and to age, with older teachers reading more than teachers in the 20 to 30 age group; women read more than men. Included in the implications of the study suggested by Cogan are the following: If educational experts are to influence teacher practices, they will need to write pragmatically and publish in the journals read by the teachers. Elementary administrators should provide more varied professional reading materials and time for teachers to read within the school day. Greater attention should be given to developing professional reading habits in preservice training of teachers.

III-6 Readership

The North Carolina study of newspaper non-readers was conducted by the Institute for Research in Social Science at the University of North Carolina and was reported by Penrose, Weave, Cole, and Shaw (376). The study was similar to and compared with one conducted in Wisconsin a decade earlier. The 1,130 subjects were randomly asked: "Have you read a newspaper yesterday or today?" The same type of person who did not read daily newspapers in the Wisconsin study are still not reading them today: those of lower levels of education and income who tend to consider themselves as members of the working class. After accounting for various factors that might have caused a larger number of non-readers of newspapers in the present study than in the earlier one, the investigators concluded that it seems likely there has been a real decline in the use of the daily newspaper. Those who continue to read the newspaper tend to be those of higher education, income, and social class; in the middle age range; and from urban areas. Differences between readership and non-readership are not accounted for by sex, religion, or political party preference. Although the Wisconsin study found no relationship between amount of television news viewing and non-readership, the North Carolina study found that those who watched television news were more likely to be newspaper readers than those who did not. Both studies found that those who use libraries are likely to be newspaper readers. People who use one medium are likely to use another.

The data from the readership survey by Gaziano (168) tended to support the hypothesis that a subsidized government publication known as *The Paper* functioned as an urban community newspaper in a Model City complex. The primary focus of the paper is toward minority groups, low-income population, and decision-makers. The results of the telephone survey and interviews revealed that 2-thirds of the respondents read the paper. Women comprised 2-thirds of the total readership and 2-thirds of those finding issue-type news important. Readership was low among minority racial groups when they were compared to the racial composition of the community. The subjects also named other sources of news with 63 per cent reading other newspapers, 53.3 per cent preferring television news; 39.1 per cent naming the radio, and 13 per cent including magazines. They were permitted to name as many sources as they used. Of the respondents preferring newspapers as their main source of news, 67.7 per cent stated they were interested in political issue news.

Using an intermagazine approach, Fletcher and Winn (148) analyzed advertisements concerned with food products to determine the characteristics that produced women readers. Three kinds of scores were obtained from the subjects: "noted" (persons remembered seeing the advertisement), "associated" (persons remembered seeing or reading the brand name), and "read most" (persons remembered reading at least one-half of the written material in the advertisement). The independent variables included media variables, such as home service or general editorial; format variables, such as advertisement size or number of illustrations; position variables, such as section of magazine or left or right page; and content variables, such as number of brand name identifications or product facts or benefits. Eighteen magazines were covered. Home service magazines such as *Better Homes and Gardens*, *American Home*, and *House Beautiful* tended to receive higher noted scores but lower associated scores than the base category of women's magazines, such as *Good Housekeeping*, *Ladies' Home Journal*, and *Woman's Day*. Left hand pages and bleed formats yielded higher scores than right hand pages. The number of advertisements was positively related and the number of product facts inversely related to the "read most" score. Across the 146 magazine advertisements, the content set tended to be most associated with the readership set.

III-7 Literacy

Northcutt (357) described the general methodology of the Adult Performance Level Study (APL) and the findings concerned with general knowledge areas of occupational knowledge and consumer economics. The sample consisted of 360 counties, arranged in 6 blocks, each with 60 counties, each block being an independent subsample representing the United States. The counties were selected randomly to represent geographical stratification, the sample being updated annually to reflect population changes. Although telephone directories were used to select starting points, interviews were not conducted with telephone listings but with the household immediately to the left of the listed one. Potential subjects were adults 18 through 65, living in households, and physically able to read and write. Two starting points were chosen, one for the Occupational Knowledge Test and one for the Consumer Economics Test. Testing was conducted through interviews. Among the many findings reported are the following: When given a W-4 form and information concerning the number of dependents, 36 per cent were not able to read, write, or compute well enough to ascertain the correct number of exemptions. Only 56 per cent could match correctly personal qualifications to job descriptions when they read a series of newspaper help-wanted advertisements. About 20 per cent could not find a statement defining the meaning of an equal opportunity notice. More than 75 per cent were unable to read, write, and compute well enough to state correctly one total cash price for a mail order when they were given price information and a mail order form. When given a restaurant menu, 29 per cent (a projected 34.2 million adults) could not order a meal within a set amount for 2 people. When they read a series of 4 newspaper help-wanted advertisements, 17 per cent (or an estimated 20,071,000 adults) were unable to determine which one was placed by a private person instead of a corporation or public institution. These findings and others led Northcutt to conclude that many more adults than one might expect are "illiterate" in the sense of being unable to apply skills to pragmatic adult problem areas.

Ahmann (5) reported upon the results of tests administered by the National Assessment of Educational Progress. The twofold purpose of the assessment included the following:to obtain census-like data on the knowledge, skills, concepts, understandings, and attitudes by selected populations in 10 learning areas and to measure the change in educational attainments that occur over time. Subjects were selected from age groups corresponding to the end of primary, intermediate, secondary, and post-secondary education. Ahmann described very specifically the development and the administration of tests. Representative findings given the report included the following: The young American subjects lacked knowledge of the fundamentals of politics and civil rights and of the contributions of minority groups to American culture and history. Relatively few could read and interpret graphs, maps, or tables. Only a small per cent could give the names of their United States senators, congressmen, or the secretary of state. In general, the subjects achieved better in reading than the specialists who prepared the test items had anticipated. They read well enough to accomplish simple, practical kinds of tasks. Adult men and women read at approximately the same reading level, but school-age males read less well than school-age females. Youth from innercity areas and those from families where neither parent had gone to school read less well than most of the other groups assessed. The overall reading ability of white subjects was higher than that of black subjects. General trends were delineated. Youth in affluent suburbs performed better than rural students who, in turn, achieved higher scores than innercity students. The educational level of the parent was a vital part in the achievement of the students. For example, those whose parents had only a grade school education performed least well; as the level of the parent's education increased, so did the performance level of the subject. The performance of black subjects was consistently below the national average.

The purpose of the research reported by Murphy (349) was to determine the reading tasks performed by adults, the time spent in performing them, and the importance adults attached to the tasks. Each subject was asked questions concerning visiting with friends, eating meals outside the house, working at a job for pay, and reading newspapers, magazines, and books. Each person described his activities of the previous day and answered questions related to the purposes of the study.The average time spent in reading per day was 106 minutes, but there were large variations in the time spent on reading activities as well as the importance attached to them. Approximately 6 per cent who reported reading at all did so for less than 5 minutes; in contrast, small numbers read for as long as 7 or 8 hours per day. The measure of importance used was based on the number of persons who read within the general activity, the number who read with a specific activity, and the number who rated the activity as important. Of the 12 reading tasks considered to be important, the 3 most important were price, weight, and size information; street and traffic signs; and main news in the newspapers. While the national survey was being conducted, test developers prepared a test intended to represent the types of tasks performed by adults in everyday life and to discriminate adults who can function adequately from those who cannot. Approximately one-half of the items were answered correctly by 80 per cent of the sample, with significant differences among adults being found.

In a survey conducted by Robinson (408), a majority of recent doctorates in adult education stated they would have been better prepared for their current position if their academic preparation had included some course work in literacy instruction, particularly work in teaching reading skills to adults. Over 70 per cent of the respondents stated that they had not had a course in reading instruction; 65 per cent had never taught reading at any level. When asked to define *reading*, the responses were varied but emphasized the decoding aspect. Most of the respondents were in administrative positions related to adult education; they gave the impression that the responsibility for literacy training was that of the classroom teacher.

Questionnaires concerning programing for reading instruction were sent to a sample of commercial television stations in the United States and Canada by Kinnamon (261). Included in the survey were such items as the length, frequency, and time slot of the program, qualifications of the television instructor, and number of program viewers. Only a few stations reported having such programs. Descriptions of several programs, some of which are now defunct, as well as the list of stations to which questionnaires were sent, were included in the report.

The current literacy campaign in Tanzania was described by Malya (310). The general census of 1967 revealed that approximately 75 per cent of men and women over 15 years of age were illiterate. In addition, about one-half of the youth of school age did not attend school. Over 90 per cent of the total population lived and worked in rural areas where the rate of illiteracy was greater than that in urban areas. Previous efforts to decrease illiteracy had appeared somewhat wasted because over half of the adults who had become literate relapsed into illiteracy because of lack of follow up reading materials. A functional literacy project was begun in 1968 with the teaching of basic reading, writing, and arithmetic through words from agriculture and industrial practices. Emphasis was placed upon adult education through various means: the formation of a National Advisory Committee on Adult Education; appointing Regional Adult Education coordinators; training of permanent trainers at the national, regional district, divisional, and war levels; preparation of reading materials in harmony with the needs of adults and intensive publicity in regard to the need to be literate. By 1975, 63 per cent of the adults who were illiterate in 1967 had enrolled in adult literacy classes. To provide for materials for the literacy graduates, Tanzanian traditional materials were collected and recorded. Traditional stories told by tribal elders were taped for both preservation for cultural heritage and for translation into print.

The aim of Goody and Watt (178) in their historical study was to discuss in very general terms some of the more historical and functional consequences of literacy. The transmission of the verbal elements of culture first came about by oral means in face-to-face contact; all forms of knowledge, then, became stored only in human memory. In prehistory, man expressed himself through pictures; but ideas were not precisely communicated. The basic invention which supplemented the logograms was the phonetic principle which permitted for the first time in history the written expression of all words of a language. However, the phonetic systems were imperfect but continued with very little change for centuries. Although the number of sounds which human beings can make is vast, nearly all languages are based on the formal recognition by the society of approximately 40 sounds. By symbolizing phonemic units of the alphabet into letters, it is possible to write and read easily about anything society talks about. At first, there was a tendency to use writing only to aid memory. When written records appeared, historical sensibility began. The investigators felt that insufficient attention had been paid to the fact that the urban revolution of the Near East produced the invention of writing which changed the whole structure of cultural tradition. The first methods of writing were difficult to master and were relatively limited in use, but the simplicity of alphabetic writings made widespread literacy possible for the first time. It was in the seventh century B.C. that an essentially literate society began in Greece. Members of literate societies were faced with permanently recorded versions of the past and its beliefs. The logical, specialized, intellectual tradition of sixth century Ionia arose. One of the consequences of literacy is that more becomes known about the differences between simple and complex societies.

The uses of literacy in India and China were described by Gough (179). As in Greece, writing developed rapidly in India, and writing materials were available. A similar level of literacy may have characterized periods of high culture in China after the introduction of brush-writing and the standardization and simplification of letters about the third century B.C. Although alphabetic writing has been known to the Chinese since the second century A.D., they have always refused to accept it. Even though universal literacy is an immediate goal in China and although a simplified script has been devised, the Communist government has not instituted the alphabetic form. Therefore, literacy really does not require an alphabet; although an alphabet and easily used writing instruments greatly facilitate literacy. Various Indian scripts are also not alphabetic but semi-syllabic. There is a dearth of historical materials in India. The Chinese had a stronger sense of chronology and linear time than did the Indians. By the fourteenth century Chinese maps were superior to European ones and comparable in accuracy to the Arabian ones; in contrast, Indian geography and cartography are poorly developed in extant literature. The development of scientific logic came early in both India and China.

Tambia (488) selected a Buddhist village in northern Thailand to determine the kinds of information found in written form, the uses made of it, and the personnel involved in literate activities. The dominant people of Thailand and Laos are often described as being divided into 4 regional groups on the basis of language, geographical location, and cultural variation. In the village selected, there was no mass literacy but a literacy of specialists who were in touch with the higher learning of Buddhism, with gods, with curative knowledge, and more recently with the government. The main agency of transmission of literacy of specialists has been the village temple. The leadership and prestige hierarchy (the respected elders of the village who were primarily ritual and medical specialists) placed great emphasis on literacy and linked it with the religious training of youth. The literacy imparted at the temple was a restricted kind largely devoted to reading religious scripts; writing was largely a matter of copying.

Literacy in Kérala, located on the southwest coast of India, was described by Gough (180). A large majority of Christian, Jewish, and Muslim men were probably literate in earlier periods. However, there was no ban on a woman's learning to read, and all literate groups included some female scholars. Most of Kérala's literature was written by Nambudiri Brahmans; it included Sanskrit prose works on ritual, grammar, law, astrology, philosophy, and logic. The reasons for the high amount of literacy in Kérala in the traditional period were its high agricultural productivity, growth of overseas commerce, and the relatively high status given to women. Characteristics of Kérala resulting from widespread literacy included an interest in the development of logic as a science; recognition of grammar and syntax, logic, history, geography, and the like as separate disciplines; and a great interest in books and records. Bulk printing has been very important in the development of literacy in modern Kérala.

Wilks (540) reported upon literacy of the specialized trading groups of the Dyula, which constituted a major part of Muslim learning throughout a large part of western Sudan. Education in the Dyula towns provided opportunities for the talented and well-taught pupils to acquire rapidly a command of Arabic. Only a minority achieve high success, but many will leave school able to read and write. Early travelers were impressed that the Dyula culture was a literate one. Wilks was especially interested in those who completed their elementary education and continued to become teachers or functionaries of some sort. The title of *karamoko* was given to those who completed 3 advanced works frequently read with one teacher. No student under 30 begins work with them; it is not uncommon to see students who are 50 or 60 years old. They may remain attached to the teacher for many years; no time limit is placed upon the student. Students completing the work commonly enter the teaching field. There is no fixed scale of fees, but it is customary for the students' families to make gifts with reference to the progress made. Wilks showed the relationship between trades and learning and referred to the role of a universalistic written code.

Because of the movements of Muslim pilgrims, of royal raiders, and of traders, even the simplest societies of northern Ghana were undoubtedly aware of the existence of writing and of literate society, according to Goody (177). All of northern Ghana recognized the value of writing as a means of communication with the supernatural powers. The literacy rate was low among the Muslims by any standards used. To acquire literacy meant prolonged residence outside the local community. Scholars moved from place to place even at the elementary levels of learning. Writing was important because it served as a link between the trading communities. The most noticeable feature of the education offered was its predominantely religious character; this feature was one of the reasons for lack of literacy. The pupils did not learn techniques of reading and writing in school but memorized the holy word. Learning tended to be rote rather than recognition. Schools were part time, and students often spent more hours on their teacher's farm than in study. The number of efficient literates was small. Magic as well as religion dominated literacy.

The role of writing among the Somali pastoralists of the Horn of Africa was investigated by Lewis (284). The religious leaders have been virtually the only literate people in spite of trade with Islam. Few nomads have attended school regularly because of their way of living. Traditionally, the literacy rate for men has been very low and has been almost non-existent for women. Effective oral communication is characteristic of the Somalis. Some sectors, however, have been affected by literacy. For example, writing has been an important element facilitating settlement of disputes on a national basis. Also, one of the features of this society is the presence of very long genealogies, sometimes including 30 known ancestors, which children learn. These people seek to establish the identity of individuals and groups. Lewis pointed out that the genealogies may be socially manipulated and may become a combination of historical accuracy and creative imagination.

The history of literacy in Madagascar was traced by Bloch (39) from the time of the 2 early tribes, the Antaimoro and the

Antambahaoka, whose members possessed the art of writing in Arabic script. Their scholars have referred to their manuscripts largely because of interest in the fact that there was a long-standing existence of writing in a remote part of the world. Arabic script was already in use there in the sixteenth century. The early writings were similar to those of today in that they emphasized the power of the written word, especially from the religious, magical, astrological, and medicinal points of view. Arabic script had only a small place in the history of the country because just as it began to spread, it was replaced by European script, probably in the early 1800's. A close relationship was found between writing and astrology. The information which astrologers incorporated into their astrological scheme came from well-defined sources: Chap-books, including all kinds of information, were passed on from the head of the family to his successor. So were small, cheaply printed books largely concerned with astrology.

Meggitt (330) described the impact of writing on the completely non-literate societies of New Guinea and Melanesia. When early Christian missionaries began their work in these societies, the natives realized the missionaries had more skills, wealth, and power than they had known. At the same time the missionaries were teaching the benefits of church attendance and conversion to the faith. Men became interested in placing their sons in the mission schools so that they could learn the arts of reading and writing and thus penetrate into the secrets which the missionaries alleged were contained in the *Bible* and prayer books. When the natives did not receive the wealth and power they had envisioned, they lost faith in the missionaries and withdrew from the mission schools and churches. Until today these people remained ill disposed to Europeans because they felt they were cheated of the wealth they deserved. A different attitude towards literacy persists today; writing is now considered an everyday technique of recording important decisions and events so that they will be preserved.

Problems of defining and measuring literacy were discussed by Schofield (438), who explored the nature of literacy in preindustrial England. Problems of assessment of literacy have been heightened by historians' lack of precision in the definition of literacy, by no determination of the level of literary skills appropriate to the historical period, by poor definitions of literacy in research (sometimes reading, sometimes writing, sometimes both), and by a new form of publication being associated by literary historians with an increase in the level of literacy. The study of available educational opportunities is a necessary part of the study of literacy but does not provide reliable estimates of the level of literacy skills actually attained. By the early 19th century educational facilities were greatly expanded. Two main characteristics of these early schools were noted. First, since the sequence of teaching the skills began with reading followed by writing and arithmetic, the ability to read was probably more widespread than the ability to write. Secondly, the length of time a child remained in school was dependent upon the economic circumstances of the parents, for very few genuinely free schools were available. The level of literacy as determined by public education probably varied between different social and economic groups. Schofield suggested any measure of literacy used for historical comparisons should be applicable throughout a country to a wide range of people from person to person and group to group and from one historical period to the next. He considered the ability to sign one's name as a standard and direct test of literacy and delineated sources in past history where this evidence could be obtained. This measure, according to Schofield, probably overestimates the number able to write, underestimates the number able to read at an elementary level, and gives a fair indication of the number who are able to read fluently.

Lockridge (294) studied literacy in colonial America through an analysis of the levels of signatures found on wills. He stated there was an agreement among scholars that the level of signatures runs below, but parallels closely, reading skills and runs above, but in general parallels, writing skills; therefore, he considered the signature to correspond to the level of fluent reading. He recognized the biases of feebleness, forgetfulness, lack of educational opportunities, and lack of wealth of the aged when they prepared their wills. Throughout the entire period, the level of literacy for women was low because of their sex and not because of other forces. Lockridge delineated the advances made in New England between the middle of the seventeenth century in which the society was little more than half literate to a society of nearly universal male literacy at the end of the eighteenth century. Initial differences in literacy within regions of New England arose because of differences in the literacy rates among the migrants. Intense Protestantism was the chief force behind the drive towards mass literacy rather than changes in wealth or social position. In areas lacking the Protestant thrust, literacy was low. Literacy had more to do with the access to occupation and so to wealth than vice versa. Male literacy in colonial Pennsylvania and Virginia rose to the 2-thirds level by early eighteenth century and then stagnated for the remainder of the colonial period. In Virginia, the relationship between social status and literacy remained as high as it had been in the seventeenth century. At the end of the eighteenth century, the New England wills approached an 85 per cent male literacy in comparison with the 60 per cent level for Pennsylvania and Virginia. Lockridge pointed out that in other countries, such as Scotland or Sweden, when Protestantism was strong, literacy was also strong.

III-8 History of newspapers and magazines

Carey (67) assessed the impact of 2 information delivery systems, the Pony Express and the transcontinental telegraph, by examining 3 newspapers, the *San Francisco Evening Bulletin, The Sacramento Union*, and the *Los Angeles Star*. Before 1860, obtaining information from beyond California's border was a constant problem for editors because most news required from 22 to 26 days to arrive. Carey examined 2,000 issues of 3 newspapers and analyzed in detail 200 issues between January 1, 1860, and December 1, 1862, the dates spanning the period before the Pony Express and after the completion of the telegraph linkup. Because of the availability of news, all these papers increased the amount of national news on the first page. The year 1861 was that of peak interest in the Civil War. The papers showed less interest in international events than in national ones. All 3 papers allocated more space inside to international news between 1860 and 1862, but only the *Bulletin's* coverage was extensive. Editorial comment on national events increased in the paper, but, in general, there was little editorial comment on global affairs. The completion of the telegraph terminated the Pony Express.

Since both primary and secondary sources have not determined a founding date of the New York Associated Press, a forerunner of today's Associated Press, Schwarzlose (440) compared news stories in early New York newspapers in pursuit of a more definite information than had been available. He traced the use of common, identical news dispatches from Washington and Europe in 3 competing New York City newspapers back to 22 months prior to May 13, 1848, which the literature had established as the earliest recorded date for the Associated Press. The earliest known telegraphic news broker was Alexander Jones, who supplied several papers which shared in the expense. Jones probably handled some of the earliest dispatches carried by the New York press. The earliest news dispatches which were labeled telegraphic were dated May 2, 1846. Since each of the 3 newspapers first printed telegraphic news, their reports were identical. Therefore, a wire service, whether it was the New York Associated Press or Jones Telegraphic Reporters, was operating in New York City in mid-1846. Although he did not establish a specific founding date, Schwarzlose found evidence that the New York Associated Press was operating before the established date so far as European news was concerned. In addition, publishers used the steamer *Buena Vista* on May 2, 1848, to meet ships off Halifax and to rush news to Boston.

During the Civil War, the business of Atlanta's *Daily Intelligencer* was to bolster Southern morale. Even when the invasion of Sherman's army was inevitable, Bussel (64) found that the *Intelligencer* remained loyal to the Confederacy. It was one of the city's oldest newspapers, founded as a weekly in 1849, and became in 1860 the mouthpiece of the Secessionists. It had faced problems of gathering news, securing news print, and raising advertising rates. During the war, when Atlanta's population increased dramatically, other dailies, as well as those from Chattanooga, Knoxville, and Memphis, brought competition to the *Intelligencer*; the latter was the only native newspaper to survive. Although it remained loyal to the Confederacy, it criticized its leaders and administration, and dealt critically with local problems. When the situation worsened in Atlanta, the *Intelligencer* moved to Macon, where it again returned to its brand of optimism. Atlanta fell on September 2, and the *Intelligencer* returned on December 10, 1864, still remaining optimistic and loyal to the Confederacy until its demise in 1871. As is true with other newspapers, it both reflected and tried to mold public opinion.

The success of *Better Homes and Gardens* has been due largely to the original goals and ideals of its founders. Reuss (397) traced the history of the magazine from inception through its fiftieth anniversary. From its beginning, the magazine was intended for average home-centered American families whose interests concerning their homes were always the concern of the editors and staff. During the 1930's, it became evident that the readers were best satisfied with useful kinds of information and neighborly conversations, including some humor and advice. Throughout its history, readers were invited from time to time to contribute ideas to the magazine. The personal home interests of the staff became known through articles written about them. The various shortages of World

War II affected the magazine's content. Because new homes were out of the question, the staff concentrated on helping people maintain what they had. After the war, the magazine published building plans that readers could handle. In the 1950's, the average number of pages was 250, with some issues having as many as 400. However, the recession of the late 1950's caused a re-evaluation of the material given to the reader. The size of the magazine decreased, but the circulation increased, reaching 7 million today. In the 1960's, the staff developed the concept of the home as an enjoyable center of activities. Reuss concluded that magazines which are dedicated to a single idea and serve their readers are the ones that survive.

Unlike the present status of *Better Homes and Gardens*, the influence of *The American Mercury*, which is also celebrating its fiftieth anniversary, has waned under right-wing extremism, especially during the last 2 decades, according to Anderson (10). Once respected as an intellectual magazine, it has lost in both circulation and influence. From time to time, the magazine has included questionable and exaggerated articles on Communist penetration into American life, such as in higher education and the clergy; the danger to the fighting spirit of the Marines because of brutalities in their training; predictions of doom in losing the Cold War; anti-Semitism; racism; and similar topics. Circulation decreased to approximately 10,000 subscribers; financial problems hampered the production. First, the number of pages decreased; then, there was a change from a monthly to a quarterly publication.

III-9 Newspaper publication

Newspaper circulation markets were examined by Turpin (508) to ascertain if increases in circulation have been more pronounced in areas having high economic and educational factors and if these factors are good predictors of newspaper circulation. The counties were examined in 1960 and 1970. The sample was taken from 50 counties with urban population, 38 reporting a circulation gain of 541,417 and 12 counties having a total of 108,671. Economic wealth was measured by total personal income in constant dollars for the 2 periods; a control for inflation was included in the computation. Turpin found that the best predictor of increased circulation was population gain; economic factors as measured in this study appeared to be negatively associated with circulation increases. The level of education had a relatively weak but positive effect on circulation.

Eberhard (127) studied the manner in which changes in American society were reflected in the relationships of newspaper circulation and demographic data in 1940 and 30 years later in 1970. Newspaper circulation data were obtained from the Audit Bureau of Circulation for the 2 years. A stratified random sample of newspapers was selected; these in turn were divided into 6 strata, based upon their 1970 population. A total of 284 newspapers were considered. No significant difference was found in overall circulation penetration (a ratio of newspapers over occupied housing units) for dailies. Differences were noted when the 6 strata were analyzed separately. For example, Sunday newspapers, suburban newspapers, and large non-metropolitan newspapers showed significantly higher circulation gains than any other population grouping. Some losses were noted in other groups.

The numbers of newspapers beginning and suspending publication from 1960 to 1969 was the focus of another investigation by Eberhard (128). During this period, 176 new dailies were started and 162 suspended; however, there were multiple listings because a number of the new dailies did not survive more than a few months. An average total of 33.8 starts and suspensions occurred during the 10-year period. Most of the new dailies were found in smaller communities and in the smaller circulation size categories, but the bulk of the suspensions was also found in the small newspaper classification.

As a result of interviews with 39 journalists in 14 states and the District of Columbia, Bombey (44) summarized his impressions concerning newspaper coverage of drug use and abuse. Among the more important of his conclusions are the following: Most reporters do not know any more about drugs than readers do. Newspapers stress the sensational or dramatic aspects of drug abuse stories and often are influenced by regional points of view. Myths are often reported as facts; official information from the local police is accepted without any cross-checking with street sources. Major newspapers do not have "drug beats." Complete interviews with 3 reporters were included in the report.

Reasons for rejecting news releases from press associations were explored by Lindley (292). The results of a questionnaire revealed that the 2 most commonly stated reasons were the feeling that there was no interest in the story and that the paper had a lack of space. A second survey was sent to wire editors to ascertain why the wire editors thought the rejected stories were of no interest to the readers. The results indicated that the wire editors were not subjected to many rules and could make selections as they saw fit. Since most did not belong to organizations, Lindley believed the wire editors had very limited contact with the groups in the community and, as a result, little opportunity to become apprised of community opinion.

Mann (312) tested whether crowd estimates given for antiwar rallies by hawkish newspapers differed from the numbers reported by the dove press. The editorials in a sample of 22 newspapers with circulations ranging from 151,000 to 845,000 were analyzed for policy. Estimates of the crowds were noted for the first rally. The second rally was held at the Lincoln Memorial and later at the Pentagon. In this experiment of the 27 newspapers which were analyzed, 21 gave estimates at the Lincoln Memorial and 24 at the Pentagon. In both experiments, when crowd estimates were compared with the political position of the paper, the hawkish newspapers gave smaller estimates than the doves. In each case, the data supported the idea that the average crowd estimates appeared to be a function of the political position of the newspaper.

III-10 High school journalism

The work of the Commission of Inquiry into High School Journalism on censorship, minority participation, journalism education, and the established media were reported by Nelson (352). Data were obtained through 5 sources: public hearings, 12 consultation meetings held in various regions of the country, 4 surveys, content analysis, and relevant research undertaken by others. Because many findings were presented in the book, only samples can be given here. High school journalism is characterized by censorship which has generally been accepted as a routine process by students, teachers, and administrators. Free expression, independent inquiry, or investigation of important issues in either the school or the community are not encouraged. Censorship has been the fundamental cause of both the triviality and uniformity that characterize the high school press, which in most places is no more than a mouthpiece for the school administration. Educators do not take seriously the First Amendment problems of high school journalists and do little to protect the free press rights of students. Members of racial, cultural, and ethnic minorities face subtle barriers and negative attitudes in their attempts to participate in high school journalism; few minority high school students throughout the country have become involved in journalism, especially in schools where minorities constitute a small percentage of the student body. When the numbers of minority students are roughly equal to the numbers of non-minority students, they have greater access to journalistic activities; when minorities constitute a large majority of the school, there tend to be fewer newspapers than in predominantly white schools. In Spanish-speaking and Indian communities, there is a severe lack of multilingual and multicultural journalism. The established media, both print and electronic, did little to encourage high school journalism or to support the First Amendment rights for high school journalists. The Comission gave detailed recommendations for changes in high school journalism. The appendix contained information on legal aspects of high school journalism, guidelines for the development of high school programs, survey questions and the results of surveys, and selected readings. Of importance to this section of the Summary and found in the appendix were the results of a content analysis of approximately 300 high school newspapers, analyzed according to the number of items devoted to each of 9 categories. Sports and social events together comprised approximately 50 per cent of the items. In-school and off campus issues, protests, and local or national news accounted for 20 per cent of the total. Only 3 per cent were concerned with student government. Papers did not differ much in content in different regions of the country, in small towns or in large cities, in different sizes of school population, and in the inclusion or exclusion of advertising.

III-11 The press outside North America

Little scholarly attention has been paid to the press of the Pacific Islands in Polynesia, Melanesia, and Micronesia, according to Richstad and McMillan (400). The newspapers there are a reflection of the uneven growth of the people in political, social, and economic matters. A growing sense of national identity among groups of islanders is reflected in the Pacific Islands press. A directory compiled in 1972 listed 63 publications, many not strictly newspapers. Eight of these are daily, except Sunday, and 4 appear 5 days a week. These are found principally in the large urban areas. The 20 weekly publications make up the largest single category. More than half of the publications were established after 1960. A recent trend has been the growth of tourist-oriented publications for free distribution to visitors, used mainly as an advertising and promotion medium. More than half are printed in English or with at least half of the contents being in English. Although the circulation of island newspapers is difficult to judge with certainty, it appears that dailies account for 25 per cent of the circulation with weeklies accounting for another 25 per cent of the total circulation.

By means of case studies, Lent (281) described mass media in Laos, which is at one of the lowest stages of development in Asia. Not much is known about the history of the press there because Laos has been in a state of turmoil for many years. The Laotian press today is plagued with problems, mostly economical in nature. Newspaper shortages, poor working conditions, inadequate printing presses, and low calibre of staff personnel are all problems with which the editors must contend. As a result of increased costs, both the size and the frequency of publication of the newspapers have been reduced. Poor sales were attributed by one editor to the fact that Laotians like to read love stories with morals and not about politics. As is often found in developing countries, broadcasting will fare better in the future than the press because government priorities will be placed on the far-reaching media. Currently the most popular radio programs are those of music, drama, news, and debate. Political candidates cannot use the services for campaign purposes.

Highton (210) presented a case study of *Le Monde*, described as perhaps the world's finest tabloid and the only Paris daily paper making money. It is indispensable for the French who wish to be fully informed. It was compared with *The New York Times* in that it blankets big stories. It averages 32 pages daily and carries a supplement on different topics every weekday. To some people it is dull; the typography is antiquated; it carries no photographs; it is badly edited; it assumes its readers have a vast amount of information. News and opinions are often mixed. Yet, it is considered to be the best and most influential newspaper in France. It is non-partisan and appears to report world news more extensively than French news.

Scotton (444) found that there had been little direct examination of the African press of East Africa by scholars because the African newspapers were almost entirely published in vernacular languages and because copies of African newspapers were difficult to locate. Early reports stressed an irresponsible and subversive African press in pre-independence Kenya, but researchers had failed to cite any African newspapers as original sources. Clippings and tear sheets from these papers accompanied by a translation have been preserved in the Kenya National Archives. The grievances appearing in these papers were found in lengthy letter columns in which the writers complained about various social problems;they were often based on facts and presented in moderate language. A dozen or so African newspapers appeared suddenly after World War II; before this time there had been hardly any independent African newspapers in Kenya. Kenya's press remained essentially one of protest rather than of nationalism, mostly to obtain redress to economic, social, or political grievances. A major grievance was the strict control exercised by African chiefs; some grievances went to the basic issue of the European position in Kenya. Violence and dislike of Europeans were found in only extremist mimeographed news sheets. Because the first weekly paper published by the Kenya government was a failure, the legislature gave the government power to seize presses used to print seditious literature. Because of the new law, Asian printers were reluctant to publish African newspapers; as a result, African editors tried using their own ancient presses. Circulation dropped, and readers turned to the mimeographed sheets which were impossible to control.

III-12 Reaction to the press

The results of an investigation by Orwant and Ullmann (365) revealed that media attitudes of Pentagon Army officers differed from a comparable group of civilians in several important respects. In a survey taken of Pentagon Army officers and adult civilian males, 3 sets of questions were asked: one concerning the effect of the publication of the Pentagon papers, the second about the right to publish information about military affairs, and the third about the credibility of media in reporting military news. Questions concerning media exposure were also asked. A significantly higher per cent of officers than civilians had favorable attitudes toward the news media (newspapers, television, radio) concerning the effect of the publication of the Pentagon papers, but the opposite was true when they were asked about the effect of publication of the Pentagon papers on the conduct of American foreign policy. The officers indicated that the Army should give permission to publish stories about American military operations in Vietnam but that it was unnecessary to receive permission to publish any stories of any kind about the army. Neither they nor the civilians believed that the media were getting too much information which was strictly the business of the army. The officers' responses were more unfavorable than the civilians' were on media credibility issues. There was no significant difference between the 2 groups on questions related to the amount of exposure time.

Through interviews with active or recently retired justices of the Washington Supreme Court and current and former reporters for the Olympia wire bureaus who had covered the court, Hale (193) assessed the relationship between the press and state appellate courts. A major finding was that although the reporters felt that the coverage of the court was as good as that of other state government agencies and perceived the judges as being well satisfied with press coverage of the court, the judges did not agree. The judges resented editorial criticism of the courts and expressed the belief that court news reporters should have taken formal courses in journalism. The reporters showed satisfaction with the cooperation of attorneys, justices, and court officers; but they had little contact with these people, especially the justices.

The study by Starck (478) focused on the manner in which newspaper policy-makers and readers view issues pertaining to what the press should be like. A series of 68 statements concerning the role of the press in society and representing a range of opinions about press functions was constructed. The subjects were asked to sort the statements along a 110-point scale ranging between "most agree" to "least agree." Personal interviews were conducted with 39 subjects, including 7 representing top management posts in 2 newspapers. The remainder were from a variety of professions. The items upon which all showed strong agreement were those concerned with the need for accuracy and objectivity and the role of the newspaper as an informer. Least agreement was noted about the money-making role of the newspaper. Three types of respondents were identified: Type I stressed the social role of the press and favored outside controls on newspapers if they were needed. Type II strongly opposed outside intervention and felt that newspapers should actively check upon the government. All 7 from the newspaper profession were in this group. Type III saw the press as a news dispensing instrument and favored a passive stance by the newspaper toward government.

Tankard and Ryan (489) determined the kinds of errors which occur in scientific news stories by consulting the sources who are quoted, the general attitudes of these scientist sources, and the variables that influence the accuracy of newspaper science reporting. Each issue of 20 newspapers, selected as a random sample from the 26 states east of the Mississippi and from papers having circulations over 50,000, was searched for science articles for 3 months in 1972. A questionnaire was designed in which each scientist source was asked to check which of 42 kinds of errors occurred in the story quoting him, to indicate on a 7-point Likert scale his agreement or disagreement with statements related to attitudes toward scientific writing, and to answer questions about himself (highest degree earned, number of reporters who contacted him in the past year, and the like). Other predictors were content category, origin of the article, newspaper circulation category, and presence of a byline. Both the original news story and the questionnaire were sent to each subject. The mean number of kinds of errors was 6.22 per story, with the number ranging from 0 to 24. The most frequent kinds of errors were those in which relevant information about the method of the research was omitted, in which relevant information about the results was omitted, and in which the investigator was misquoted. The attitude scales showed that a majority of the scientists believed that newspaper coverage of science news is important to both the scientist and the public, that headlines on science stories are often misleading, that information which is crucial to the understanding of research results often is omitted, that most science reports contain misstatements of fact, that too much emphasis is given by newspaper reporters to the uniqueness of scientific results, and that many science news reports are too brief. When the errors and the predictor variables were analyzed, only one of 9 variables was significant: whether or not the scientist read the story before publication.

The goal of the study by Surlin and Walker (485) was to relate employee characteristics to employee attitudes toward the corporate newspaper. Specifically, the variables included employee tenure, job rank, and the manner in which a topic was handled (in this case whether or not the topic was presented as they thought it should have been handled). The subjects were asked how they felt 3 hypothetical stories dealing with bad news should be handled and how the corporate newspaper would handle them. On a 5-interval, Likert-type scale the subject rated 6 sentences from "strongly agree" to "strongly disagree." A vast majority felt that the hypothetical stories should have in-depth coverage but that the corporate newspaper would make little comment. Two groups were formed to represent high and low agreement. When asked if the paper presented all points of view, management and the low agreement group were more significantly likely to disagree or to exhibit a more negative attitude towards this aspect of the corporate newspaper. The high agreement subjects were more likely to disagree with the statement that the paper overlooked important issues than the other groups.

III-13 Juvenile Book publication

In a revised and enlarged edition of a book published in 1952, Eyre (143) emphasized current trends in juvenile book publication in Great Britain, especially in England. He began his book with an historical survey of children's books in Britain for the past 70 years. He pointed out that the history of children's books in Britain cannot be considered separately from the history of publishing and that it is possible to discern a cyclical pattern in British children's books throughout the centuries. He noted that fluctuations of taste have been greater in children's books than in any other form of publishing. He divided the publishing phases into 5 periods; discussed trends, books, and authors of each period; and concluded his historical survey with a list of important children's books with their authors and dates of publication. The remainder of the book includes critical summaries and comments on numerous selected children's books, classified by types and authors. The real twentieth century picture books began in the 1930's, and their distinguishing feature was the use of color lithography. A new kind of informative picture book, which was a significant development before 1950, included instructional subject matter far more difficult than could be understood by children who normally read picture books. The classic full page line drawings or color drawings have been replaced by a more flexible use of illustrations, either as chapter heads and tails or as small drawings within the text. The deliberate use of child-like drawings is one of the contemporary developments. Although the best children's books are better illustrated than ever before, a surprising amount of poor work can be found. Eyre considered the various kinds of fantasy books to be twentieth century's principal contribution to children's literature. Popular subjects within the fantasy classification are magic and witchcraft. Two kinds of fantasy books were described: stories about ordinary life with some extra quality added, such as the power to have wishes granted, and stories about a different kind of world altogether. Series books concerned with educational topics have value, but creativity is lost when the series books are fictional. Drastic changes have been made in books of fiction, largely because of the increased sophistication of the readers. In contemporary adventure stories there is a preoccupation with criminal activities. A strong revival of interest in historical stories was also noted. Eyre concluded that British writing for children had come a long way in the twentieth century with impressive progress being made in the past 20 years. Better children's books are now available in sufficient variety for any child to enjoy. He also included brief resumés of examples of contemporary regional writing in Ireland, Scotland, Australia, Canada, New Zealand, South Africa, and the West Indies. A list of award winners was included for the Carnegie Medal, Kate Greenaway Medal, Australian Book of the Year Award, Esther Glen Award (New Zealand), Canadian Book of the Year, Arts Council Award, The Guardian Award, and the Eleanor Farjeon Award.

III-14 Effect of reading

McLeod, Becker, and Byrnes (326) questioned the results of previous research concerning the agenda-setting function of the press because of different methodological problems with this kind of research. Agenda-setting hypotheses have been concerned with the effects the media have upon people because of the issues they emphasize. The investigators conducted a controlled study of the readers of 2 newspapers that emphasized different content during the 1972 presidential campaign. During personal interviews conducted with potential voters, the subjects were asked to indicate which of 6 issues they had read or heard about in the current presidential campaign and which they considered to be the most important. The same issues had been used for a content analysis of the front, jump, and editorial pages of 2 newspapers. The results showed striking differences between the emphasis in the liberal and the conservative papers. The liberal paper emphasized honesty in government and the conservative stressed the Vietnam war. Subjects were also asked questions concerning party preferences, strength of partisanship, medium most relied upon for politics, campaign interest, interpersonal political communication, their presidential voting preference, and 4 questions related to gratifications sought from political news in newspapers. During the week following the election, subjects were interviewed by telephone concerning possible effect variables: direction of presidential vote, change of interest in the campaign, vote change, and campaign knowledge. The results gave only moderate support to the agenda-setting hypothesis. The Vietnam war issue was considered the most important by readers of both newspapers. The honesty in government issue emphasized in the liberal paper did not have much effect upon the readers of either paper. Two other issues, defense spending and tax burden issues, were considered more important than the media attention would warrant. Only the subjects who considered newspapers to be their major source of political news and those least interested in the campaign appeared to be influenced by the newspaper contents agenda.

Robinson (407) not only studied the effect of newspaper endorsements of candidates in the 1972 national election upon voter decisions but also accounted for other pervasive factors that might have influenced voting behavior. The data were gathered by the Center for Political Science of the University of Michigan through interviews concerning voting behavior and use of mass media during the election. Of the 1,119 adults interviewed, the 501 who reported both having voted and having followed the campaign were the subjects for this particular study. The endorsements of the newspapers were verified through the listings in *Editor and Publisher*. Robinson found that even when other factors were accounted for, voters' choices were related to the endorsements of the newspapers which they reported reading. The relationship between newspaper endorsements and presidential voting behavior remained after controls were applied for party identification; for 12 other predictors, such as opinion giving, interest in the campaign, feelings of political efficacy, age, education, religion, urbanicity, sex, vote intention expressed in pre-election interviews; and for possible interaction effects due to the region. The differential after controls were applied was almost identical to the differential obtained in a parallel analysis for 1968 voting behavior.

Payne (369) hypothesized that the rate of instrumental crimes (auto theft, burglary, robbery, larceny, breaking and entering, theft, forgery) would decrease during newspaper blackouts, but the rate of expressive crimes (aggravated assault, rape, murder) would remain unchanged. Three cities (Cleveland, Minneapolis, and Vancouver) where newspaper strikes had caused newspaper blackouts were selected for this study. A month-by-month analysis was performed of the crime data in each city. These data during the whole strike periods were compared with the non-strike year average of the corresponding periods. No support was found that instrumental crimes decreased in periods of newspaper blackouts. As hypothesized, the expressive crime rates were not lower during the same period. The per cent of strike months having lower than average crime rates was the same for both kinds of crimes. While the newspaper strike in

Minneapolis was under way, newspapers were continuing to be published in St. Paul. About the same degree of similarity between crime rates in the 2 cities that existed during the 4-year average also existed during the strike year; these data also show no relationship between newspaper blackout and crime rates.

Pornographic materials were evaluated to test the commodity theory in the research of Zellinger, Fromkin, Speller, and Kohn (556). The commodity theory maintains that by restricting a commodity and thus limiting its availability, the desirability of the commodity will increase. Male undergraduate subjects read experimental materials which had allegedly been taken from book covers. One half of the students received an age restriction of 21 years on the book; the other half did not. Also one half were told that the book was "definitely pornographic" while the others did not receive this kind of information. After reading the materials all subjects responded to a questionnaire by using a Likert-type scale to questions asking how much they wanted to read the book, how desirable the book was, how much they felt they would like the book, how available the book was to the general public, and how pornographic and erotic they felt the book was. The subjects who read that the book was restricted to those 21 years and older perceived the book as less available to the general public than did the other subjects. The information concerning pornographic content of the book and the age restrictions increased significantly the degree to which the subjects viewed the book as both pornographic and erotic. In general, the results confirmed the commodity theory prediction that placing age restrictions on a book increases the value associated with it. The age-restricted materials were not more valued because of the pornographic implication than were non-restricted materials.

The results of the experiment by Weaver, Hopkins, Billings, and Cole (529) on the use of direct quotations versus paraphrases in newspaper stories showed that the direct quotations did not generally make much difference in how college students evaluated the stories or the persons in the textbooks. Two speech stories and 2 interview stories were selected from metropolitan daily newspapers; each article dealt with a different subject. Two versions of each story were prepared and printed, one with all statements attributed to the speaker by means of direct quotations and the other with all statements attributed to the speaker by means of paraphrases. Both versions were identical except for the quotation marks and paraphrasing. Each university subject received 2 direct quotation versions and 2 paraphrase versions, each one from a different story. The subjects were asked to evaluate the stories by means of 8 sets of polar adjectives. The subjects were asked to read the articles at their usual pace, to evaluate the stories and the people in them without looking back at the story, and to complete a comprehension quiz on each story. Each subject also gave information about himself so that the effects of the students' background could be evaluated. There was no significant difference in how readers of direct quotations vs. readers of paraphrases rated the stories on accuracy, objectivity, believability, informativeness, interest, conciseness, readability, or colorfulness. On 6 of the 8 adjective sets, there were no significant differences on the evaluations of persons in the stories. Persons quoted directly were rated significantly more dramatic and more emotional than the same persons whose remarks were paraphrased. When journalism class, sex, daily newspaper readership, evening television news exposure, and journalism experience were controlled, additional but scattered significant differences were found. Very little difference was found in the comprehension and retention of factual material between the 2 versions.

The purpose of 2 experiments reported by Culbertson (93) was to ascertain whether pictures had more emotional impact upon subjects than detailed, factual verbal descriptions of the same referents and whether increasing the iconicity of a message would increase its ratings when detailed photographs were used rather than less-detailed drawings and when the subject matter portrayed was highly sensational. In the first experiment, the subjects rated the verbal descriptions of photos taken from newspaper files as to sensationalism or emotional impact; after 2 weeks they rated sharp photographs in the same way. On the whole, the verbal descriptions received slightly higher ratings than pictures. When the meaning of the picture was dependent upon the context in which it was placed, the verbal mode was favored. Sometimes pictures apparently call attention to the actual objects portrayed and away from related issues or principles. In the second experiment, the investigator selected 6 photographs which had been rated either high or low in emotional impact in both pictorial and verbal modes in the first experiment. In addition to sensationalism, the major independent variable in this experiment was iconicity. The control version, or all-verbal, was assumed to resemble the referents little or not at all; a second treatment was in the form of line drawings which primarily represented shape. Black and white photographs portraying both shape and detailed shadings or markings were used. Two articles were written in journalistic style in which supposed experts were quoted on both sides of the 2 issues. The results of factor analysis ratings on 37 semantic differential scales showed 2 clearly-defined meaning dimensions, ethical-evaluative and interest-vitality, and 2 vaguely-defined ones, competency and arousal. Iconicity and sensationalism each related positively to both evaluative-ethical and interest-vitality ratings. In no case were iconicity and sensationalism significantly related.

III-15 Attitude and opinion change

The effects of reading literary works by black and white American writers on students' attitudes toward black literature were explored by Cooke (87). Experimental and control subjects were pretested and post tested on the Attitude Toward Black Literature Scale. The experimental groups read and discussed poems, plays, and novels by black and white authors; following the discussion, each experimental subject completed a creative project. Experimental groups showed a significantly greater attitudinal change toward black literature than did the control groups. In one experimental class, black subjects with a black teacher showed a greater attitudinal change toward black literature than shown by black subjects with white teachers in 3 other experimental classes. There was no difference between males and females in attitudes toward black literature.

III-16 Persuasion resulting from reading

The selection of a new president at one of the state universities provided an opportunity for Gross, Schmidt, Keating, and Saks (188) to test procedures which might be used to increase the probability that a potential voter would exercise his franchise. An election was planned so that students could voice their preference for the presidency. Letters were sent to the subjects under one of 3 conditions. The first and last paragraphs were alike in all conditions. In the persuasion treatment, statements about democratic participation were stressed. In the surveillance treatment, the subjects were informed that their behavior would be monitored by the Concerned Campus Citizens; they were also given portions of the persuasion letter. Feedback letters, the third condition, contained the surveillance information and the promise that the recipients would receive a voting certificate which would be validated if they voted. When the extent of voting of experimental and control subjects was compared for the primary election, the persuasive letter significantly increased the voter turnout. The surveillance and feedback conditions added significantly to the effect of the persuasion letter, but the feedback did not produce a significant increase in voting compared to the surveillance letters. In the runoff election more experimental than control subjects voted, but the differences in the effects of the 3 conditions were not significant.

The study by Stone and Hoyt (482) sought to clarify the effects on persuasion of the variables of relevance of expertness and likability which were studied in a problem-solving situation. Undergraduates in a mass communications course read an 800-word defense of television coverage of the courtroom, a practice which 70 per cent of a similar group had previously been found to oppose. Each subject was randomly assigned to one of 4 experimental conditions, which differed only in the description of the source which preceded the message. The source was described as highly expert in an area either relevant or irrelevant to the topic of the message and also as either likable or unlikable as a person. After the subjects read the message and the source description, they evaluated the professor's competence on the issue of television courtroom coverage, his expertness on the issue, his trustworthiness, and his likability as a person. They also responded to an attitude scale concerned with the issue of television and the free press-fair trial. Likability by itself did not affect attitudes toward the topic, but it did influence attitudes through the interaction with relevance of expertness. Since no specific information regarding trustworthiness was given, this characteristic was determined by likability and not by expertness. On the other hand, competence was determined by relevance of expertness, not likability. In general, the study showed that relevant as well as irrelevant source characteristics may affect attitude.

III-17 Research techniques

The purpose of the Edelstein (129) study was to develop a methodology for opinion measurement that would reflect the everyday world of the subject in which he was not required to make a decision. That is, the subject defined the nature of the alternatives which he had been considering and the bases upon which he was considering them. If he had no opinions, he would be free to state that fact. Edelstein illustrated the methodological approach with a sample interview which included descriptions in terms of objectives and the structure of the questionnaire as well as the subject's remarks concerning the importance of the problem of Vietnam. Data for all interviews were analyzed by comparing the responses of low and high education groups to specific questions. Of particular interest here was the section on the use and evaluation of the media by the subjects, who were asked how they were learning about the war and which of the media provided most of their information about the war. For all subjects, newspapers were mentioned most often (33 per cent), followed by television (32 per cent), magazines (17 per cent), people (10 per cent), and radio (7 per cent). Significant differences in preferences for media were found in regard to magazines (more preferred by those of higher education) and television (more preferred by those of low education). Those of higher education used more information but were also more critical of the information and sources of information than the lower educated.

Donohew and Tipton (115) tested 2 strategies that might be used in information-seeking situations: broad focus and narrow focus. The broad focus strategy is one that initially involves identifying potential sources of information and inputting them on a relatively non-selective basis; the broad focuser would review the kinds of information, select the most useful, and organize other materials around it. In the narrow focus strategy, the individual first focuses on one source of information and adds sources and ideas as he finds them. The investigators tested their model in an upperclass course in communication theory. The data collection involved measures of personality and self-reports on goals and techniques. While preparing a term paper, the subjects filled out a questionnaire on their goals (grade aim, interest in graduate school, interest in communication theory), demands on their time, and availabiltiy of information. They also were required to keep a diary of their work on the assigned term paper, including the reasons they chose items, their notes on the items, records of conversations, and notes on reactions or thoughts during their work. Although the researchers intended the diaries to be the main data source, they gave only a broad, general idea to the students of the kinds of information they wanted because of the danger that the investigators might influence the responses of the subjects. The diaries were coded according to the criteria of availability, prior knowledge, variety-seeking behavior (interest in new fields or materials), broad focus / narrow focus, and closure (consideration of one topic or more than one topic). Notes from the diaries were counted for other information-seeking measures, such as numbers of literature sources consulted. The data showed that many of the variables were not directly related to information strategies. Among the findings are the following which are pertinent here: The measure of immediate goals (grade aim) correlated negatively with variety-seeking behavior and with narrow focus strategy; the students who aimed for a higher grade tended not to attach much importance to searching out novel materials but tended to stay with conventional subject matter and to use the strategy of building up a large list of potentially useful titles before beginning to seek information that would develop their topic. Prior knowledge of the topic for a term paper was related to narrow focusing but tended to increase problems in finding specific sources. The broader the focusing strategy used, the later the subjects closed their information search. From the findings of this research and others, Donohew and Tipton prepared a flow chart of their model.

Anderson and Berdie (11) analyzed survey response rates when different followup techniques were used with different kinds of populations. Questionnaires concerned with the role of graduate assistants were sent to administrators, faculty members, graduate assistants, and undergraduate students. Humorous, whimsical, and formal followups were devised and sent to non-respondents. The overall response rate was 88 per cent. Different followup techniques proved to be more effective with different groups. Graduate assistants responded more to a whimsical followup than undergraduates and to a humorous followup more than the faculty. Undergraduates were more responsive to a humorous followup than were graduate assistants and to the hand-addressed postcards than to those with typed labels. For other groups there were no significant differences found in the number of responses to hand-addressed cards as contrasted with typed addresses. People accustomed to receiving formal correspondence responded more to formal followups; those accustomed to less formal correspondence responded more to informal followups.

Grunig (189) reported the results of 3 experiments which tested the impact of 3 writing devices (analogy, fable, example) on a lay audience's understanding of scientific economics concepts. The articles were identical except for the use of the 3 devices. The experimenter used the Signaled Stopping Technique to observe the cognitive effects of analogies, examples, and parables. This technique asks the subjects when they are reading to put a slash mark in the sentence any time they wish to stop and to indicate in the margin their reason for stopping. Subjects were told to indicate whether they stopped to agree, to disagree, to ask a question, to think, or for another reason. Decision types were determined by the stops and the reasons for stopping: problem solvers (recognize a problem and a have solutions), routine habit individuals (do not recognize a problem but have alternatives), constrained decision makers (recognize problem but have no alternatives), and fatalists (have no alternatives and do not recognize problems). In the first experiment, a simple treatment (straight writing) and an analogy treatment were used; in the second the simple, analogy, example, and parable treatments were used. The first 2 were repeated in the third experiment to clarify inconsistencies and to use different categories in the stopping technique. Subjects in the problem solving and constrained modes stopped significantly more than those in routine habit and fatalism groups. When they perceived a problem to which the scientific information was relevant and had an open situation in which to apply the information, these subjects stopped more often to think about the implications of the story, which is considered to be a necessary condition for understanding scientific concepts. Problem solvers stopped to think about implications significantly more than did the other types. Parables were effective for only the problem solvers, but analogies were effective for all except the constrained decision group. In general, the results showed that the style of a science story was not so important as the relevancy of the content as perceived by the reader.

IV *Physiology and psychology of reading*

IV-1 Physiology of reading

Friedman (155) carried on 2 experiments to determine the effects of fusional-eye movement skills training on reading. In the first, 8 subjects at ninth grade were chosen because of their interest, high motivation, and ability to apply themselves to the learning task. The teacher gave the training, using the Visual Training (V.T.) Reading Aid, under the investigator's supervision. After a period of 9 weeks of daily training, the average reading grade score increased from 4.5 to 8.5; the rate increased from 400 to 1,200 words in 2 minutes, with equal numbers of errors, on an unspecified test. In the second experiment, 40 poor readers in 3 classes and 30 poor readers in 2 classes were matched, on some unidentified basis. All were from grades 8 and 9. The experimental group had fusional-eye movement training while the control group had remedial instruction, both supervised by the reading teacher. About half of the 40 were reported to have worked indifferently at visual training. After 13 weeks, the experimental group had gained an average of 2.2 years while the control group gained 1.2 years in reading. The only explanation of tests used was that the county school system evaluated reading before and after the experiment. The conclusion reached by the experimenter, on this evidence, was that fusional-eye movement stresses commonly block reading progress of poor readers.

Hoffman (216) tested the hypotheses that there would be a positive correlation between total scores on a set of 20 visual skills tests, as well as each separate test, and the *Metropolitan Readiness Tests* for kindergarten. Six tests were new but the other 14 had been used in previous studies. The subjects were 30 pupils, randomly chosen from 2 kindergarten classes of mainly white, middleclass families. The total score on the Metropolitan is rated in 5 categories; therefore, each subtest of the visual skills tests was rated on a scale from 1 to 5, with explanations of these ratings given in the report. The coefficient of correlation between the total scores on the Metropolitan and the visual skills tests was .79, significant at the .05 level. To test relationships between each visual skills test and the Metropolitan, the Chi Square Test was used with the midpoint of the average range of scores on the latter test, 64, to determine above and below average for the contingency tables. Significant relationships (.05) were found with the following visual tests: binocular rotations, monocular rotations, monocular saccadic fixations, simultaneous perception at distance, fusion at distance, fusion at near, lateral phoria of near, visual efficiency O.D. at near, visual efficiency O.S. at near, accommodative flexibility, and visual efficiency O.U. at near. The other 9 measures of functions were unrelated to the Metropolitan. The total scores on the visual skills tests were significantly (.05) related to the Metropolitan.

Ellis and Shepherd (136) examined the accuracy of recognition of abstract and concrete words presented in the left versus right visual fields. The 20 concrete and 20 abstract nouns were equivalent in length and on the Thorndike-Lorge frequency counts. Words were matched in pairs, equidistant from the center; and each word was exposed to each hemifield in the pairs. Exposure time was 150 milliseconds, followed by a blank field. Subjects reported words or letters in each of the pairs. The 12 right-handed subjects were supplemented by an unreported number from the "general public."

Analysis of errors showed superiority (.025) in recognition of words in the right visual field compared to the left. In addition, a Word × Position interaction was significant (.05) showing no difference in errors on abstract and concrete words in the right hemifield; but concrete words were better recognized than abstract ones in the left hemifield. Likewise, overall, concrete words were more readily (.01) recognized than those that were abstract.

Stern, Bremer, and McClure (480) evaluated the effects of the administration of Valium (5 mg, t.i.d.) compared to a placebo, on electro-oculograms recorded during a 40-minute session while reading a book. Two groups of male college students, paid to participate, included 8 experimental and 9 control (placebo) subjects. Each student read a book while the electro-oculograms were recorded. For one week, the Valium or placebo was self-administered under the directions of a psychiatrist. Finally, another 40-minute period of reading with recording followed and each subject was asked whether he thought he had been taking Valium. The electro-oculograms were recorded on magnetic tape and processed on a computer. The electrodes were affixed to the outer canthus of each eye to record horizontal movements. Eye blinks were recorded from electrodes placed above the right eyebrow and on the right cheek bone. The speed of movement of the eyes (saccadic) and the durations of fixations were subjected to analyses of covariance on the accumulated data secured before and after drug administration. There were no differences between the 2 groups before treatment. Afterward, the experimental subjects showed a significant (.05) decrease in the number of saccades per minute but no general difference in the duration of fixations. However, the experimental group showed an increase in the per cent of fixations which exceeded 400 milliseconds (msec.) in duration (.005). Other differences showed a significant (.05) increase in time for the return sweep of the experimentals and no changes for the control groups. Also, maximum velocity was slowed by Valium (.05) but not for control subjects. Blink frequency did not change in the experimental subjects, but there was a significant (.05) difference in closure duration. Prior to the experiment, few durations exceeded 70 msec., but afterward, the number was significantly (.05) greater. The data were interpreted to mean that Valium slows down information intake and aspects of information processing.

Davis (98) examined the polygraphic evidence of frustration related to 10 per cent oral reading error and 50 per cent comprehension on an informal inventory. Subjects were from a lower income neighborhood. They were from 3 ethnic groups: 18 were Negro Americans, 23 were Mexican Americans, and 21 were "anglo" Americans. They were from grades 3, 4, and 5. They were matched for IQ, sex, and reading levels also. The Spache *Diagnostic Reading Scales* were administered individually to each child and recorded on tape for later analysis. The polygraph recorded psysiological functions: heart-beat rate, blood pressure, breathing rate, and amount of perspiration. A professional technician operated the polygraph and, for each child, a *priori* set the percentage of variations in the polygraph functions which would indicate frustration. Each child continued to read orally until he had reached the frustration level set by the Spache Test or the polygraph frustration level, whichever was higher. The mean per cent of oral reading errors, not counting repetitions, was 7.65 with a standard deviation of 7.30. The null hypothesis and the z statistic was used to test the differences between frustration levels. When repetitions were counted, the 10 per cent oral reading errors could not be rejected by the polygraphic data. However, when repetitions were not counted, the null hypothesis was rejected. Thus the 10 per cent error rate, with repetitions counted, produced frustration as measured by the polygraph. When the error rate was considered, the frustration mean per cent was 58.39, which yielded a z significantly different from 50 per cent at the .01 level. Thus, it is probable that a somewhat higher comprehension score is needed before frustration appears. However, the wide range of comprehension scores suggests that these findings apply to groups but not to any single child.

IV-2 Sex differences

A study conducted by Forslund and Hull (150) hypothesized that the school achievement of pre-adolescent boys and girls would be higher under male than female teachers. A total of 1,322 boys, 1,350 girls, 47 male teachers, and 48 female teachers were utilized in the study. The measure of achievement used was the *SRA Achievement Test* containing subtests of Science, Language Arts, Reading, and Arithmetic. Intelligence, measured with the *Lorge-Thorndike Test*, was partialled out so as not to be an intervening variable. With IQ held constant, boys did significantly better than girls in Science, while girls did significantly ($p < .01$) better than boys in Language Arts. Both of these findings appeared to be related to sex of student rather than sex of teacher. No significant differences were uncovered relative to Arithmetic, Reading, or composite *SRA* scores. The authors discuss limitations of the study and findings in light of related research.

Dwyer (124) attempted to assess the effects of perception of sex role on achievement in reading and arithmetic. Using nearly equal numbers of subjects at grades 2, 4, 6, 8, 10, and 12 (mean group IQ was 105.8), achievement information from the *Stanford Achievement Test* was collected on subjects in grades 2 through 8, and from the *Iowa Tests of Educational Development* for subjects in grades 10 and 12. Two sex-role checklists were then administered to each subject. The first (SRS) was designed to assess children's sex-role standards concerning achievement and other areas. The second (ISRP) yielded reading and arithmetic preference socres, and a sex-role conformity. Each checklist contained 46 items and was read orally to subjects while they responded in a written manner. A series of multiple regression analyses were used in dealing with the data. With the effects of the other variables partialed, SRS accounted for 1.5 per cent of the variance in reading achievement for the total group; when considered along with other variables, it accounted for 4.5 per cent of the variance in reading scores. The ISRP was found to be nearly unrelated to reading achievement. The relationship of IQ, SRS, and sex to reading achievement was analyzed and found to account for negligible variance at grades 2 and 4; the strongest effects of these variables were felt at grades 8 and 10. The effects of SRS were stronger for males than females, while the effects of IQ on reading achievement for males and females was nearly equal. Generally, data from the SRS indicated that subjects regarded reading as more a female activity than a male activity, and that sex-role standards had their greatest effects on achievement in males.

IV-3 Intellectual abilities and reading

Wallbrown, Wherry, Blaha, and Counts (522) compared the hierarchical factor structure of the WISC for normal and reading disabled subjects. They hypothesized 1) less effective ability integration for poor readers indicated by less subtest variance due to a general factor, 2) less ability organization due to smaller communality estimates, and 3) a different overall arrangement of abilities for poor readers on the WISC. Subjects numbered 70 reading clinic referrals with a mean Full Scale WISC IQ of 98.3, a mean CA of 10 years, and at least a 2-year discrepancy between reading test scores and learning expectancy. Subjects with emotional, neurological, visual, and auditory impairments were excluded from study. Data analyses consisted of several preliminary analyses leading to the use of the Wherry-Wherry hierarchical solution on WISC subtest intercorrelations. Data obtained in this fashion from poor readers were compared to data from the original standardization sample for the WISC. Using Vernon's structural paradigm, normal readers exhibited a strong general factor and 2 major group factors corresponding to verbal-educational ability (*v:ed*) and spatial-perceptual ability (*k:m*). Further, all Verbal subtests constituted effective measures of *g*, with Vocabulary and Information loading most highly. Additionally, Verbal subtests loaded heavily on *v:ed* and Performance subtests loaded heavily on *k:m*. This same structure emerged for poor readers, as well as 4 additional primary factors. For this group, the general factor was much weaker. Factor 1 was called "freedom from distractibility" and was found to be differentiated from the broader *v:ed* factor. It was loaded by Digit Span and Arithmetic subtests. Factor 3 was also differentiated from *v:ed* and was called "verbal concept formation," indicated by the Similarities subtest. Factors 2 and 4 were differentiated from the broader *k:m* factor and were called the "spacial-perceptual component" and "quasi-specific" respectively. Coding and Picture Arrangement loaded on Factor 4, while Factor 3 was represented by the additional Performance subtests. Poor readers did appear to show less effective ability integration as indicated by the smaller amount of variance attributable to a general factor for this group. Smaller communality estimates among subtests were not found, indicating that poor readers do not necessarily have less ability organization. With the emergence of the 4 primary factors that were differentiated from the major factors, support was found for the contention that poor readers do have a different and more complex ability structure than normals.

The purpose of the study conducted by Wallbrown, Blaha, Counts, and Wallbrown (522) was to examine the factorial composition of the WISC and ITPA for reading-disabled children relative to Vernon's hierarchical ability paradigm. According to Vernon's paradigm, 3 general factors were predicted: 1) a general (*g*) factor composed of diverse measures of intelligence, 2) a verbal-educational (*v:ed*) factor ranking below *g* in the hierarchy and involving abilities including application of acquired information and skills to the solution of new problems, and 3) a spatial-perceptual-mechanical (*k:m*) factor parallel to *v:ed* in the hierarchy. Subjects in the study had a mean age of 110 months, a mean WISC Full Scale IQ of 101, and a discrepancy of at least 2 years between standardized reading test scores and learning expectancy level determined by the WISC. All subjects with emotional neurological, or physical impairments were excluded from the study. For each subject, then, 12 WISC and 10 ITPA subtest scores were available. A hierarchical factorial solution (Wherry and Wherry) combined with an estimate of communalities and a varimax rotation for assigning variables to clusters was utilized. Results indicated the existence of the *g* factor, although not strong, which accounted for about 9 per cent of the total variance in all subtests. Both the WISC and ITPA measured *g* equally effectively; the ITPA representational subtests were more effective in measuring *g* than the automatic subtests; the WISC verbal and performance subtests were equally proficient in measuring *g*; and the Auditory Association subtest of the ITPA was the single best measure of *g*. Additional results indicated that all WISC and ITPA verbal subtests loaded on Factor I (*v:ed*) positively and that the ITPA appeared to load more on Factor I than the WISC. In terms of both tests, the 4 most effective *v:ed* assessors were Grammatic Closure, Auditory Association, Sound Blending, and Auditory Closure—all from the ITPA. ITPA subtests of Visual Reception and Visual Association also loaded moderately on *v:ed*. Factor II was defined by an overall pattern of positive loadings from WISC Performance subtests. Two visual-automatic subtests from the ITPA, Visual Sequential Memory and Visual Closure, loaded on *k:m* substantially. Finally, 5 primary factors were identified as components of the general factors of *v:ed* and *k:m*. Three primary factors named automatic language, verbal precision, and freedom from distractibility were differentiated from the broader *v:ed* factor. Two primary factors named quasi-specific and representational language could be differentiated from the broader *k:m* factor. Factor loadings, variance partitions, and reliability estimates for all 22 variables are reported.

Wallbrown, Huelsman, Blaha, and Wallbrown (523) compared the mental abilities of severely reading disabled readers with normal readers. Data consisted of WISC subtest intercorrelations for severely disabled and normal readers. Subtest intercorrelations for both groups were obtained from other studies. The hierarchical factor structure of WISC subtests for the 2 groups differed. For normal readers, the ability hierarchy included a strong general intelligence (*g*) factor defined by an overall configuration of positive loadings on all 11 WISC subtests. In addition, a verbal-educational factor and a spatial-perceptual factor were found. For the reading disabled group, 4 factors were found: verbal comprehension, perceptual organization, freedom from distractibility, and a bi-polar factor for the Picture Completion and Coding subtests. These factors were not organized according to an identifiable theme in a hierarchy. Freedom from distractability was the only factor present in both normal and severely disabled readers. The severely reading disabled presented less effective ability integration but the 2 groups were not distinguishable with respect to degree of organization.

Sewell and Severson (446) compared the performance of black children on the WISC to that of the original standardization sample, and looked at the relationship between the WISC and measures of achievement. The 84 first graders were administered 7 subtests of the WISC, as well as Reading and Arithmetic subtests from the *Stanford Achievement Test*. The mean IQ for the sample was 86. Sixty-six per cent of the subjects had higher Performance than Verbal IQ's, and 88 per cent demonstrated differences of 4 points or more between Performance and Verbal IQ's. Correlations between IQ and achievement measures were significant ($p < .001$), but were generally lower than those reported in similar studies.

Seiderman (445) examined Performance subtests of the WISC in an effort to determine their utility in measuring perceptual and perceptual motor deficits. Ten subjects, averaging 8.6 years of age, were chosen randomly from the author's file of reports on children who had been given clinical evaluations. All subjects had been administered the WISC subtests of Block Design, Object Assembly, and Picture Completion. In addition, each subject had also been given the *Divided Form Board* (DFB) test (commonly used by developmental optometrists) and the *Southern California Figure Ground Test* (SCFG). Correlations among the measures were computed. The DFB was found to positively and significantly ($p < .01$) correlate with Block Design and Object Assembly. Upon statistical adjustments, the correlations were significant at the .08 and .05 levels respectively. When correlations were adjusted for age and grade levels, only the correlation between the DFB and the test of Object Assembly remained significant ($p < .05$). No statistical significance was obtained in any of the 3 sets of correlations using the SCFG or the WISC subtest of Picture Completion. The author provides a review of literature and calls for careful evaluation of WISC subtests for their potential use as screening devices for perceptual deficits.

Rugel (423) examined the factor loadings of the WISC in light of Bannatyne's assertion that WISC subtest scores for disabled readers are best analyzed in terms of categories involving Spatial, Conceptual, and Sequential abilities. Data obtained from 3 experimental samples used in previous research were reanalyzed. Group I was comprised of 240 subjects, whose mean age was 12 years and mean Full Scale IQ on the WISC was 96; these subjects were defined as reading disabled by deficits on the *Wide Range Achievement Test*, the *Stanford Reading Achievement Test*, and informal reading inventories (2.3, 2.9, and 4.5 years respectively). Group II consisted of 71 reading clinic referrals with an age range of 9 to 11 years and a Full Scale WISC IQ range of 85 to 127; these subjects had a reading deficit of from .5 to 4.5 years on either the *Chicago Reading Tests* or the *Gates Reading Survey Tests*. Group III was Wechsler's original standardization sample of 200 boys and 200 girls, age 10.5. The WISC subtest scores of each sample were factor-analyzed using a principal component solution and a varimax rotation. Communalities were estimated, using the squared multiple correlation coefficient. Three factors were extracted in each sample. In all 3 samples, Factors I and II appeared to be spatial-performance and verbal factors corresponding to Bannatyne's Spatial and Conceptual categories and had been confirmed in previous research. Factor III, however, differed for the 3 groups. For Group I, Factor III appeared to be bipolar with Coding and Arithmetic loading positively, and Picture Completion and Picture Arrangement loading negatively. For Group I, variance associated with Digit Span appeared to be unique. In Group II, Factor III was comprised of Information, Similarities, Arithmetic, Digit Span, and Coding—the last 3 having the highest loadings. Group III obtained its highest loadings from Digit Span and Arithmetic for Factor III. The results indicated that Digit Span and Coding do not load on Factors I and II and therefore can be logically placed in a separate category. The author includes tables of factor loadings and intercorrelation matrices, as well as a discussion of WISC subtest patterns in disabled readers and discussion of a basis for regrouping the WISC subtests.

Maxwell, Fenwick, Fenton, and Dollimore (316) conducted a study designed to test a model of brain function advanced by Godfrey Thomson. Thomson maintained that a test of general cognitive ability samples a wide variety of elemental components of the brain while selective sampling of specialized abilities would involve a subset of these components, and that intercorrelations of these latter measures would be much higher when compared to tests of general cognitive ability. For the study, 2 groups of 52 fourteen year olds from the Isle of Wight were utilized; data from 5 subtests of the WISC were available (tests included Similarities, Vocabulary, Block Design, Object Assembly, and Coding—the first 2 being classified as *verbal* and the last 3 as *performance* tests). The 2 groups had been divided into good and poor readers on the basis of the reading comprehension sections of the *Neale Test*. In addition EEG readings were obtained for each subject from a Type T Offner under conditions of *eyes closed* and *eyes open*. The right temporal, right occipital, left temporal, and left occipital channels were digitized; and the variance spectra were then grouped according to reading comprehension. On the basis of data obtained previously with a younger experimental group, specific hypotheses were generated. In essence, the variance power spectral analyses of EEG readings were expected to be consistently higher for poor readers, reflecting a verbal factor that exists for good readers but not for poor readers, as well as a lack of differentiation between the 2 groups on a performance factor. This increase in variance of EEG amplitudes for poor readers, then, would be consistent with Thomson's theory of brain function. Fisher's sign test was used to calculate significance levels of the differences in the variance spectra between the power at all 20 mean frequencies for the 2 groups. In the eyes shut condition, poor readers tended to have greater generation of brain activity, but the difference was not significant. However, in the eyes open condition this tendency was consistently significant ($p < .001$) at all frequencies. The authors discuss the statistical interpretation of their data as supportive of the general model proposed by Thomson. They also discuss limitations, such as the model's inability to explain in what way the various units of the brain are functionally linked.

Kretschmer (270) discussed the application of Piaget's theory of intellectual development to reading comprehension. Three levels of the *Gates-MacGinitie Reading Tests* were administered over the course of several years to children in elementary school in Pennsylvania. A *post hoc* exploratory analysis of responses to items on these tests was conducted. In terms of Piaget's concept of *Centration*, several items were reproduced that indicated problems in this area. Besides errors that indicated attention to irrelevant details, errors brought about by relating events incorrectly because they are juxtaposed in time or space (transductive thought) and errors brought about by the inability to perceive reciprocal or compensatory actions (irreversibility in thought) were described relative to specific test items. Syntactical errors, as they combine with *Centration* and other errors, were also discussed.

Corlett (88) studied the relationship among library skills, study skills, and sex in an effort to predict grade point averages of 81 college freshmen. The 80-item *Library Orientation Test for College Freshmen* was used as a measure of library usage skills, and the *Brown-Holtzman Survey of Study Skills and Attitudes* was utilized as a measure of study skills. Intercorrelations between the 2 tests was .12, indicating they were measuring relatively independent skills. Sex correlated .18 with grades, .21 with library skills, and −.20 with study skills. Further results indicated that the library skills test was the most efficient in predicting grades, accounting for 16 per cent of the total regression variance. The study skills test added little efficiency to grade prediction. Finally, women appeared to perform better on the measures used and achieved at a higher level.

Engin (137) noted that the *Wechsler Intelligence Scale for Children* often gives the high achieving child a significantly lower IQ than comparable tests like the Binet, and that according to the WISC manual, the addition of supplementary subtests does not substantially alter IQ. The purpose, then, of Engin's study was to explore these phenomena. Twenty male and 24 female fifth graders with an age range of 10.3 to 12.1 and a WISC Full Scale IQ range of 103 to 134 comprised the sample. Inclusion in the sample was based on high reading achievement (scores ranged from 6.4 to 8.7) and high arithmetic achievement (scores ranged from 5.3 to 7.8) on the *California Achievement Test*, and teacher nomination. Actual grade placement was 5.8. All subjects were given the entire WISC, including the supplementary subtests of Digit Span (*verbal*) and Mazes (*performance*). Test protocols were scored so that the following IQ's were available: 1) *verbal* prorated for all 6 subtests, 2) *verbal* for 5 subtests (Digit Span excluded), 3) *performance* prorated for all 6 subtests, 4) *performance* for 5 subtests (Mazes excluded), 5) Full Scale for all 12 subtests, 6) Full Scale for 10 subtests (excluding both Digit Span and Mazes), 7) Full Scale for 11 subtests (Digit Span excluded), and 8) Full Scale for 11 subtests (Mazes excluded). The *t* test of correlated means was employed in the data analyses. Results indicated that the inclusion of the 2 supplementary subtests significantly ($p < .001$) lowered Verbal, Performance, and Full Scale IQ for subjects in the sample. The results are discussed with reference to the use of the WISC as a screening instrument to identify bright children for accelerated programs.

DeVries (108) sought to clarify the relationship among factors related to cognitive functioning as measured by traditional psychometric instruments and Piagetian tasks. Two samples were used in data collection: the first was divided into 3 subgroups of bright, average, and retarded subjects as measured by the *Stanford-Binet* (S-B); the second sample was comprised of 50 bright and average subjects. Chronologically, all bright and average subjects were in the age range of 5 to 7 years. The retarded sample ranged from 6 to 12 years. Psychometric instruments administered to subjects included the *California Test of Mental Maturity* (CTMM) and the *Metropolitan Achievement Test* (MAT) (subtests of Word Knowledge, Word Discrimination, Reading, and Arithmetic). Piagetian tasks included 1) Guessing Game, 2) Sibling Egocentrism, 3) Generic Identity, 4) Left-Right Perspective, 5) Mass Conservation, 6) Number Conservation, 7) Sex Identity, 8) Class Inclusion, 9) Liquid Conservation, 10) Length Conservation, 11) Length Transitivity, 12) Magic, 13) Ring Segment Conservation, 14) Object Sorting, and 15) Dream. Inter-correlations of all subtests were computed for both groups, and factor analyses using both the principal-component method and the principal-factor method were conducted. Orthogonal and oblique rotations were performed. Reported results focused primarily on the outcome of the principal-component method with orthogonal rotations, since results were essentially similar regardless of method of analysis. Analysis of the *Stanford-Binet* Mental Age and Piaget tasks indicated that moderate correlations between these 2 variables and that S-B MA is a poor predictor of success on Piaget tasks. Three main factors emerged from the orthogonal rotation: a Conservation factor, a factor containing most of the remaining Piaget variables and MA, and an Identity factor. Tasks 2, 11, and 14 comprise 2 additional but weak factors. MA was related to tasks 1, 4, 8, 12, and 15; MA was independent of performance on tasks of Conservation, Identity, Sorting, Sibling, and Transitivity. Factor analysis of Piaget tasks and other psychometric instruments for both groups was similar in result. Four main factors emerged, accounting for more than 61 per cent of the total variance. The first factor included S-B MA, CTMM Language and Non-Language IQ, and tasks 4, 8, and 12. The second factor included all the conservation tasks and task 2. The third factor was defined by the 4 MAT subtests and task 15. The fourth factor was comprised of the 2 Identity tasks and task 14. On the whole, Conservation, Identity, Sorting, Guessing Game, and Transitivity stand out as particularly different from psychometric measures. Intercorrelations above .35 were found for the MAT subtests of Word Knowledge and Word Discrimination, the most notable of these being with tasks 2, 3, 7, 12, and 15. The MAT subtest of Reading correlated with substantially less consistency, however, with only 2 correlations exceeding .25 and none higher than .33. The author includes a discussion of the nature of intelligence as defined from the perspective of Piaget tasks and the perspective of more conventional psychometric tasks.

IV-4 Modes of learning

Williams (541) hypothesized that instructional materials varying in organization would interact with mode of learning, that mode of learning would interact with grade level of subjects, and that mode would interact with immediate and delayed measures of learning. Materials were prepared along a continuum of organization: 1) a paired associate learning task comprised of 2 lists of 8 concrete noun pairs (words assigned to pairs randomly); 2) 2 lists of 6 sentences each—27 total words in each list; and 3) 2 sets of 5 paragraphs and associated questions (from the Listening Test of the *Sequential Tests of Educational Progress*) equated for length and difficulty. One task from each of the 3 sets was presented visually via slides, while the other was presented orally via tape. In the paired associate task, subjects were required to give the associated word from each pair; in the sentence task, each subject was given the first part of the sentence and asked to recall the latter part; and in the paragraph task, subjects were required to respond to comprehension measures. In each task, a delayed measure was also administered. No significant differences or interactions by grade or mode were discovered regarding the paired associate task and the sentence completion task. The only significant ($p < .01$) difference in the paragraph task indicated that subjects did better on the delayed measure when the material was presented in the auditory mode. In the second experiment, spatial availability of the stimulus was investigated as a confounding variable. Subjects were presented the paragraph task by tape, by slide, and in booklet form. A one-way ANOVA and Tukey multiple comparisons indicated that the slide presentation was significantly ($p < .01$) less effective than the tape or booklet presentations. The latter 2 did not differ significantly.

Wallbrown, Wallbrown, and Engin (525) studied the utility of a battery of 11 tests in predicting variance in reading readiness performance. A sample of 215 kindergarten children from 8 schools in Ohio were administered the battery; mean chronological age was 73.8 months and mean IQ on the *Slosson Intelligence Test* was 102.88. The criterion variable was performance on the *Metropolitan*

Readiness Test (MRT), while the remainder of the battery was composed of the Slosson, *Wepman Auditory Discrimination Test, Bender Gestalt,* Visual and Auditory Sequential Memory subtests of the ITPA, *Horst Reversals Test,* and 4 of deHirsch's experimental measures (Tap Patterns, Language Comprehension, and 2 Word Recognition Tests). A stepwise regression procedure was used in data analyses. A significant ($p < .001$) correlation between the MRT and Mental Age of .752 was found, indicating that the Slosson accounted for approximately 57 per cent of the variance in readiness scores. The Horst and Bender also contributed significantly ($p < .001$) to criterion variance, accounting together for 66 per cent of the variance in MRT scores. The Wepman, the Language Comprehension Test, and one of the experimental Word Recognition Tests correlated significantly with the criterion, but accounted for considerably less criterion variance than the previous measures. The authors discuss the results in relation to the apparent importance of visual automatic functions as they relate to reading readiness, and discuss the relatively minor effect auditory discrimination and visual-motor perception have on MRT performance.

Wakefield (519) studied the responses of good and poor readers on a battery of tests requiring sequential responses in order to determine if these measures differentiated good and poor readers. A sample of reading clinic referrals was matched in terms of age to a sample of normal readers; all were considered average or above in intelligence. Each subject was administered the WISC Digit Span, WISC Picture Arrangement, ITPA Digit Span, and ITPA Visual Motor Sequencing subtests. In each instance, good readers significantly outscored poor readers. In addition, 29 subjects from each group were given the subtests of Memory for Related Symbols and Visual Memory for Letters from the *Detroit Test of Learning Aptitude.* Both of these subtests indicated significant differences in favor of the normal readers.

Perelle (377) compared the relative effect of input channel on learning in 75 second graders. A lesson about birds was constructed for presentation to second graders. The lesson was presented either via tape recordings or printed materials (visual or auditory presentation). Learning was measured by a 10-item factual quiz in 2 versions: written or oral. Both experimental groups received both instruments during post testing. The same instruments were used as pretests, with the visual or oral version administered to the appropriate experimental group. Two post testing sessions were conducted:

the first on the second day following the treatment stimulus, and the second 2 weeks later. ANOVA's and *T* score comparisons were used in data analyses. Overall, the audio medium was found to be superior to the print medium. Subjects receiving the auditory stimulus were superior on both the oral and written tests, while those receiving the written stimulus had significant results on the oral test only. Subjects who received the written stimulus were superior on the oral test compared to subjects who received the auditory stimulus. When subjects were divided by sex, a number of differences among stimulus mode and test mode resulted.

Jorgenson and Hyde (247) examined the relationship of auditory-visual integration and reading performance in children in grades 1 and 2. Subjects were randomly selected from an elementary school in a low socioeconomic community. Auditory-visual integration was assessed using a previously existing 10-item instrument; anditory memory and visual memory were assessed by the Auditory Sequential Memory subtests of the revised *Illinois Test of Psycholinguistic Abilities*. Appropriate forms of the *Gates-MacGinitie Reading Tests* were used for reading performance, and Kuhlmann-Anderson IQ scores were obtained from school records. Auditory-visual integration scores of grade 2 children were significantly higher than those of grade 1 pupils. No significant sex differences were noted. Neither auditory sequential memory nor visual sequential memory were found to be significantly related to auditory-visual integration performance. No significant relationship was found between auditory-visual integration and comprehension scores, although the relationship with vocabulary scores was significant for the total sample and for boys but not girls. No significant relationship was noted between IQ scores and auditory-visual integration. Comparisons were made with findings from previous research and differences noted.

Blank, Berenzweig, and Bridger (38) compared reaction times of normal and retarded readers to a tone, a light, and a picture in a series of investigations of the effects of crossmodal and intramodal shifting. In each study, a similar sample of grade 3 pupils was drawn from lower and lower-middle class populations. Each study used 16 normal and 16 retarded readers, separated into equal numbers of boys and girls in each condition and in each reading group. Children were classified as retarded readers if they scored at least 6 months below grade level on the *Metropolitan Achievement Test*; normal readers were those who scored at least 6 months above grade level. The task set in each study required the child to lift his finger from a telegraph key upon stimulus onset. In the first study, stimuli were a picture of a rabbit, a white light, and a tone. Results of a 3-way ANOVA indicated that normal readers responded significantly faster to all stimuli. The shortest latency reaction time for all groups was to the tone; the longest, to the picture. There was no significant difference in effect of shifting for normal versus retarded readers. In the second study, 2 lights and a tone were used. Data analysis revealed shorter latencies for the tone and no differences between normal and retarded readers in respect to the lights. Comparing latencies to the stimuli common to the 2 studies revealed significant effects for reading level, with normal readers responding faster than the retarded. Also, normal readers had faster reactions to the sound than to the light. Type of shift was found to be significant with crossmodal shifting taking longer than intramodal shifting, but there was no differential between normal and retarded readers.

IV-5 Experiments in learning

The effect of instructional objectives, including various types of objectives, on learning from prose materials was the subject of a study conducted by Kurtz (273). Subjects were divided into 2 groups, one of which received several days practice in dealing with instructional objectives while the other group read unrelated stories. Both groups were given a 13-item test to assess level of performance in using instructional objectives. Each subject was then asked to read a 1,500-word passage about pollution. A test on the passage was designed to measure application, recall, and incidental learning (12, 8, and 14 items respectively); instructional objectives used in the practice session and in the experiment paralleled these types of items. All items were multiple choice except for recall completion items. All subjects had also been given the *Lorge-Thorndike Test of Verbal Intelligence*. The practice and no practice groups were further sub-divided according to what type of instructional objectives each received before reading the passage. Using an ANCOVA, it was determined that practice in the use of instructional objectives had no significant effect on performance on the test measuring this ability. Further analyses indicated that practice in using objectives did not affect learning from prose. In fact, the no practice group significantly outperformed the practice group in immediate application and incidental learning. Also different types of objectives had no effect on learning relative to those types. The author discusses the lack of significant effects in light of mathemagenic theory.

Kaplan and Simmons (252) examined the effect of instructional objectives when presented either before or after a reading task, and the effect of the amount of information contained in the objective. Segments from 2 textbooks were used for experimental passages. The first dealt with printer specifications for designing forms; the second was about business information systems (842 and 1,091 words respectively). Two types of objectives were prepared for each passage. Objectives without information were prepared, directing subjects to learn specific information from text, but not containing enough data in the objective in order to answer subsequent test items. Objectives with information were prepared that did contain the relevant text information necessary to answer test questions. The proportion of objective-relevant passage sentences was judged to be 60 per cent. Both types of objectives were located either before or after the passage, with instructions to the subjects varied accordingly. A test item was constructed for nearly every sentence in each passage providing for both measures of relevant and incidental learning. Subjects were tested in groups of 30 or more and inspection time was recorded. A 2 × 2 and a 2 × 2 × 2 ANOVA, Newman-Keuls multiple comparisons, and Dunnett tests were used in data analyses. Results indicated no differences in performance between subjects receiving objectives before or after text, or between objectives with or without information; there was, however, a significant ($p < .01$) interaction between these 2 variables. Relevant learning, as expected, was greater than incidental learning; and a significant ($p < .001$) interaction was found between objective placement and learning, indicating greater incidental learning when objectives were in the post-position. Relevant learning was significantly ($p < .01$) facilitated by objectives without information in the pre- position, while objectives with information appeared to be most effective in the post-position. In comparison to a control group receiving no objectives, subjects receiving objectives without information before the passage and with information after the passage outperformed controls in relevant learning ($p < .01$). Controls significantly ($p < .05$) outscored subjects in incidental learning who received either type of objective prior to the passage. Few significant results were obtained by analysis of inspection times. Results are discussed in terms of their implications for theories that consider repetition, selection, and search strategies in learning from prose.

In an experiment by Gagne and Rothkopf (163), the effects of different learning directions on the recall of information and reading strategies employed by 157 high school subjects were examined. A 2,400-word passage about a fictitious planetary system was read by all subjects. Controls were told to read the passage and were directed to learn all they could since they would be tested. Experimental group subjects were told they would be tested on information relevant to a list of learning goals available to them while reading. Each goal contained a statement of the topic and from 1 to 4 facts that were to be learned about the topic. Further, the passage was written in 2 forms. In the non-dispersed form, goal-relevant information was positioned with related information concerning the particular subtopic; in the dispersed form, goal relevant information was positioned an average of 15 sentences away from related subtopic information. Additionally, 5 of the goals for each experimental subject were only partially attainable, since one of the 3 information elements asked for was not written about in the passage. A 54-item completion test was given each subject; it included 33 goal-relevant items and 21 incidental items. Upon completion of the recall test, each subject filled out a questionnaire describing his reading strategy. A 2-way fixed effects ANOVA revealed that groups receiving goal-descriptive directions and those who read non-dispersed text performed better than controls and readers of dispersed text, respectively. On multiple-element goals, the experimental group performed correctly more often than did the control group, regardless of whether the dispersed or non-dispersed text was used. For the second element, however, readers of the dispersed text performed significantly poorer. For the second element, experimentals performance in the dispersed text condition was equivalent to that of controls. Controls had a higher mean score on the incidental items than did the experimental group. Experimental subjects most often claimed the reading strategy involving reading the goals then reading the passage, keeping the goals in mind but not referring to them while reading. Controls most often claimed slow reading as opposed to skimming and rereading.

Anderson (12) explored the cloze technique as a method of assessing content achievement, and more specifically, to determine if cloze performance was analogous to performance on traditional achievement measures in terms of certain psychological principles. Stimulus materials consisted of a 4½-page typewritten passage concerning economic growth. Five achievement measures were constructed for the passage: 1) a 4-foil multiple choice test of 20 items at Bloom's comprehension level, 2) a 260-word subpassage taken from the middle of the text containing an every fifth word deletion (52 in all), 3) a subpassage similar to the preceding one in addition to which subjects were provided a list of the deleted words, 4) a 300-word summary of the entire passage with an every fifth word deletion, and 5) a 300-word summary of the entire passage with a list of deleted words. Subjects were also administered the *Quick Word Test* as an estimate of verbal ability. Each student was randomly assigned to take one of the 5 achievement tests during the preinstruction phase, and a different test (although not in both conditions of the cloze) immediately and then 4 weeks after instruction. Ten minutes were allotted for the reading of the passage. A 3-factor and a 2-factor ANOVA were used in the data analysis, followed by Scheffe multiple comparisons. Results indicated that passage cloze scores increased significantly ($p < .001$) after instruction and decreased significantly ($p < .05$) during the delay interval. Recognition cloze scores were significantly ($p < .00001$) higher than reproduction cloze scores and high ability subjects scored significantly ($p < .008$) better than low ability subjects. There were no significant interactions among these variables. Analysis of summary cloze scores demonstrated that these scores increased significantly ($p < .001$) after instruction and that the delay scores did not differ significantly from post scores. Summary cloze analyses also paralleled passage cloze analyses in terms of mode of cloze presentation and ability level of subjects. There also existed a significant ($p < .008$) interaction between the time and verbal ability factors. Analysis of the traditional achievement scores revealed similar results, except that verbal ability was of marginal significance ($p < .06$). In a second experiment, 96 subjects were administered the same materials individually instead of in class-size groups. Subjects received feedback after completing each item, half of the subjects took no pretest, delayed measures were not given, and only the reproduction cloze tests previously described were used. As in Experiment I, only identical cloze responses allowing for misspellings and tense changes were counted correct. Analyses in Experiment II paralleled those in I. In both the passage and summary conditions, scores increased significantly after instruction, ability had a significant positive effect in only the summary condition, passage scores were significantly ($p < .05$) higher than summary scores, and taking a pretest seemed to have no effect on performance. The author discusses the results in regard to their psychometric similarity to research in verbal learning that has used more traditional achievement measures.

Rickards and DiVesta (401) examined the effects on learning of different types and pacing of inserted post questions. An 800-word passage about a fictitious African nation divided into 8 text segments of 2 paragraphs each was used. Four types of questions were constructed: 1) rote fact questions asking for specific facts contained in subordinate sentences, 2) rote idea questions asking for literal information contained in superordinate (topic) sentences, 3) meaningful questions which required subjects to organize or subsume facts from subordinate sentences under ideas in superordinate sentences, and 4) task irrelevant questions for controls. Additionally, pacing of questions was varied with half of the subjects receiving one question after every 2 paragraphs and half receiving 2 questions after every 4 paragraphs. The criterion measure consisted of a free recall test based on 5 dependent variables: relevant facts, relevant ideas, relevant subsumed facts, incidental facts, and incidental ideas. (The latter 2 were based on textual paragraphs for which no questions were constructed.) Analyses of variance and Newman-Keuls pairwise comparisons were used in analyzing treatment effects. Analysis of total recall indicated that meaningful questions after every 2 paragraphs produced the highest total recall, while rote idea questions superior were to other question types in terms of total recall. All task relevant questions produced better relevant learning of facts than evidenced by controls, while type of question made little difference. Rote idea and meaningful questions produced better learning of relevant ideas, question frequency having no effect in this instance. Similar results were found in terms of the learning of relevant subsumed facts. In terms of learning incidental facts, meaningful questions in the frequent pacing condition were superior. Incidental idea learning was facilitated by both meaningful and rote idea questions in the frequent pacing condition. Additional analyses are reported. The authors provide a discussion of the results relative to current theories regarding information processing.

Walker (520) attempted to determine whether the amount of retroactive inhibition in prose learning would be affected by the presence of inserted questions in both original-learning and interpolated-learning passages. The original-learning (OL) and related interpolated-learning (RIL) passages were about a fictitious African tribe and were 2,240 and 2,190 words respectively. An unrelated interpolated-learning passage of 2,475 words was also utilized. Each OL and RIL passage was divided into 3 sections corresponding to same, unrelated, and conflicting information within the passages. Questions were inserted on separate pages after each section. A 30-item criterion test was used as the measure of learning, containing facilitation items (stems represented in the same form in both passages), neutral items (based on material in only the OL passage); and interference items (represented in both passages, but requiring different responses). Two formats for the criterion test were used—short answer and multiple choice. Tests were administered immediately and again 7 days later, and time spent in reading was recorded. Subjects were told to read carefully and answer inserted questions as they read, but not to go back to any of the material once they had turned the page. In a second study, 74 high school males used the same materials in the same format, with only the inserted questions being changed; 10 neutral items were used rather than the 10 interference items as in the first study. Results for both studies were nearly the same. In both instances, the presence of questions improved retention for material directly related to the questions but not for incidental information, and their presence had no effect on the amount of retroactive inhibition. The 2 × 2 × 2 × 3 ANOVA also indicated delayed recall was improved for only the material on which the inserted questions were based. The author discusses the effects of different test formats, time spent in reading, and type of learning on retroactive inhibition.

Felker and Dapra (145) tested the mathemagenic hypothesis that adjunct questions facilitate learning from textual materials. A prose passage about psychology was divided into 15 segments of 20 lines each; the segments of prose were either preceded or followed by an adjunct question on a separate sheet. Two types of adjunct questions were utilized: 1) verbatim or literal recall questions, and 2) comprehension questions requiring subjects to identify a new instance of a concept or to select the proper situation given a set of antecedent conditions in the case of a principle. Criterion measures were of 3 varieties: 1) a 21-item verbatim retention test, 2) a 21-item comprehension question retention test, and 3) a 5-item problem solving test requiring application of concepts and principles from the text. None of the tests contained items used as adjunct questions. The 95 college subjects in the study were randomly assigned to one of 5 groups: verbatim or comprehension questions, prequestions or post questions, and controls. A one-way fixed effects ANOVA with Duncan's multiple-range test was used to determine problem-solving performance between control and treatment groups. The comprehension post question group scored significantly ($p < .05$) higher on the test of problem solving than all other groups. A 2 × 2 ANOVA indicated a main effect ($p < .05$) for comprehension questions resulting in higher problem solving scores than verbatim questions.

Neither the question placement factor nor the interaction effects was significant. Correlations were also computed among the 3 measures, indicating a correlation of .54 between comprehension and problem solving and between comprehension and verbatim; a correlation of .41 existed between problem solving and verbatim.

Koran and Koran (269) studied the effects of inserted questions on retention under different conditions of pacing, as well as the interaction of questions with subjects' aptitudes. Stimulus materials consisted of a passage about marine biology that was divided into 20 pages of text. For each page, 2 questions were prepared; 20 of the questions were inserted into text to serve as measures of relevant learning. These questions were placed on separate sheets of paper after each page (frequent) or after every 4 pages (infrequent). Equal numbers of subjects were assigned to the frequent, infrequent, and no question control group. Subjects were asked to read the material carefully and not to refer back to any portion of the passage once it had been read. All subjects responded to a 40-item criterion test. There were no time limits for completion of the test or reading. Analyses of the treatment effects were conducted using a one-way ANOVA and Newman-Keuls for pairwise comparisons of treatment means; a multiple regression analysis was used to assess the interaction of aptitudes. Both treatment groups scored significantly ($p < .01$) better than controls on retention of relevant information, although they did not differ from one another. No significant differences were obtained for retention of incidental information. Aptitude measures of Verbal Comprehension and Associative Memory from the *Kit of Reference Tests for Cognitive Factors* were then analyzed. Associative Memory scores were positively related to incidental retention in both question groups, while they were unrelated to performance of controls. Scores on the Verbal Comprehension test were positively related to performance of controls and subjects in the infrequent question condition. Regression analyses did not disclose a significant interaction for retention of relevant information, although the trend was in the same general direction as that for incidental retention.

Swenson and Kulhavy (487) examined optimum positioning and pacing of inserted adjunct questions as these variables affect immediate and delayed reading comprehension of 109 fifth and sixth graders. A 1,320-word passage about a fictitious island and its inhabitants was divided into 20 paragraphs, each 66 words in length. For each paragraph, 2 unrelated questions and 2 lexical paraphrased questions were constructed. One of the 4 possible questions for each paragraph was chosen randomly to be the experimental question to be seen by the subjects during reading. All 80 items were included on the criterion test; those items not seen during reading comprised the measure of incidental learning. Equal numbers of questions were interspersed at intervals of 1, 5, 10, or 20 paragraphs within the pacing condition, either before or after the text to which they were related. All questions required a fill-in answer by the subjects. The criterion test was constructed in 2 forms corresponding to question type; all subjects took both forms of the test, both immediately after reading and at an interval of one week. Results of the ANOVA indicated that post questions were superior in facilitating retention compared to prequestions, that post questions failed to differentially facilitate learning of incidental information, and that relevant information was learned significantly better than incidental information. Additional findings indicated no main effects for question pacing; however, when delayed retention was considered, less information appeared to be lost over time when the text and associated questions were learned as larger units. Finally, there were no differences in terms of performance on verbatim or paraphrased questions.

Snowman and Cunningham (471) explored the effects of providing adjunct aids during reading and their subsequent effect on comprehension. A 2,189-word passage about a fictitious tribe in Africa was read by 63 college subjects. The passage was comprised of 40 paragraphs, and a multiple choice item was developed for each paragraph. Six conditions of adjunct aids were used: questions before or after the paragraphs, instructions to draw pictures based on the content of the questions placed before or after the related text, and both pictures and questions before or after text. A control group was also utilized. Subjects were also allowed to practice predetermined items. Analyses of variance, excluding controls, indicated no differences with respect to type of adjunct aid. Adjunct aids after test appeared to be significantly ($p < .05$) more effective than those placed before text. Adjunct aids in the post position also produced increased retention of non-practiced items. The only finding of interest in the analyses using control subjects indicated that practiced items were retained by experimentals more often than by controls; whereas with non-practiced items, only those who received the adjunct aid after the reading passage retained more than the control group. Generally, pictures were found to be as effective as questions in facilitating retention.

Hiller (212) examined the effects of inserted post questions on comprehension as well as their interaction with individual aptitude variables. Three passages, each approximately 1,800 words, were constructed at 3 levels of difficulty. Two sets of matched adjunct questions were also constructed. One set was at the knowledge level; the second set was at the comprehension level, according to Bloom's *Taxonomy*. More than 600 college subjects were assigned to one of 4 treatments: 1) knowledge level post questions; 2) comprehension level post questions; 3) passive reading involving no inserted questions, but the exhortation to study and read making no marks on the materials; and 4) idiosyncratic study involving no post questions, but the exhortation to read in the usual manner making any marks on the materials needed. Each of the 4 treatments was administered within each of the 3 difficulty levels of text. A 28-item multiple choice test, containing none of the items used as inserted questions (incidental learning), was administered immediately after reading and then again, without warning, 2 weeks later. Additional measures were administered to all subjects: verbal ability with the English subscale of the *American College Testing Program;* test anxiety with the *Alpert-Haber Achievement Test Anxiety;* locus of control with 2 subscales from the *Internal-External Locus of Control* test; and measures of dogmatism, social desirability, and intellectual self-confidence. Analysis of variance indicated that post questions failed to enhance incidental learning, either immediate or delayed, and tended to depress immediate retention compared to passive and idiosyncratic study groups. No significant differences were discovered according to type of question. An examination of the interaction between aptitude measures and treatments indicated virtually no significant findings. In terms of the effect of readability on delayed retention, controls reading the moderately difficult passage performed significantly better than controls reading the easy version.

LaPorte and Voss (278) examined the effects of various immediate post reading activities on delayed retention of 168 subjects (no age or grade level reported). Two passages of 1,500 words each were identified for use in the study; all subjects read one of the passages in 15 minutes. Experimental subjects engaged in 6 treatment conditions: subjects were presented with either 50 or 100 completion questions for the immediate activity; subjects were presented with either 50 or 100 statements (identical to the questions, but answers provided) requiring no response; and subjects were presented with either 50 or 100 questions (identical to previous questions) which they were to answer, after which the correct answer was provided. In the 100-item conditions, 50 of the items were relevant and 50 of the items were not related to the passage subjects read. Controls read the passage and were tested only after a one-week interval. A post test, which was delayed one week, was given to all subjects in 2 stages. Stage 1 required all subjects to complete a 100-item test. Subjects in the three 50-item conditions were tested with 100 completion questions about the article which was read, with 50 of the items (termed *old*) being the same as those items presented in the immediate activity. The other 50 items (termed *new*) were from the passage that was read, but did not appear during the immediate activity. Stage 2 consisted of presentations of another 100 questions for the control and the 100-item conditions. These questions pertained to the passage that was *not* read. No knowledge of results was provided during the delayed test. For the immediate activity, an ANOVA indicated no main effects for number of items or presentation mode. Stage 1 results (Dunnett's test) revealed that *old* item performance in all conditions was significantly ($p < .01$) superior to that of the controls. A Duncan analysis indicated that delayed performance of subjects who received knowledge of results (KR) was superior ($p < .05$) to that of the question and statement groups. Number of questions appeared to have no effect. There were no treatment effects concerning performance on *new* questions. Generally, the type of immediate activity had a minimal influence on delayed retention of questions that were asked for the first time. Stage 2 results revealed no significant effects of special interest.

Fowler and Barker (151) examined delayed retention among college students under different conditions of highlighting of learning material. Two articles from *Scientific American* and *Science* totaling 8,000 words and judged unfamiliar were used as stimulus materials in the first phase of the study. A retention test of 54 multiple choice items was constructed; 18 were based on material highlighted by the examiners while 36 were based on non-highlighted material. The 78 subjects were ramdomly assigned to one of 4 groups: 1) those who actively highlighted text (AHL); 2) those who simply read the materials highlighted by subjects in AHL, *i.e.*, passive highlighters (PHL); 3) those who read examiner-highlighted material (EHL); and 4) the controls. Subjects studied the articles for one hour, then returned in one week to review the material and take the exam. An ANOVA failed to reveal any significant differences among the 4 groups on the total test. On analysis of the 18 items based on examiner-highlighted material, the EHL group was superior to the NHL group. Performance on highlighted and non-highlighted material for subjects was also analyzed; it was found with the AHL and PHL groups that subjects were more likely to get an item correct if they had highlighted the material on which it was based. For the EHL group, items taken from material immediately adjacent to examiner-highlighted material were answered correctly significantly (p < .001) more often. No relationship was found between proportion of text highlighted and total test scores. In a second experiment involving 24 college subjects, the effectiveness of different colors (red and yellow) used to highlight material was examined. An improvement in performance was noted by the authors; however, no differences were attributed to color of highlighting.

Samuels and Dahl (429) examined the way in which purposes for reading affect reading rate. In experiment one, fourth graders were asked to read 4 stories from the SRA reading kit. Each story was at grade 4 readability level and had approximately 500 words. Two stories were designated practice stories, while the other 2 were used in the experiment. Two types of questions were constructed to measure comprehension—general (overview) and specific (detail). Under practice conditions each subject read 2 stories and responded to questions of both types. Subjects were given detailed purposes for reading beforehand that included a rationale for what the examiners were doing, reasons for the practice session, instructions to read quickly, and information that they would be given a test. Subjects were tested in groups of 25 and reading time was recorded. A modified repeated-measure Latin square was utilized. In experiment 2, college students were given 4 articles taken from the *National Observer*, each of which was around 820 words long and at grade 12 reading level. Procedures were nearly the same for both groups. Reading rate for fourth graders reading for details was 188 wpm, while the mean rate for the same group when reading for a general overview was 286 wpm (significant at .01). Comprehension scores for general overview questions were significantly (p < .01) higher than for detailed questions. Finally, a significant difference (p < .05) was found for order of presentation of stories, with comprehension scores on first-presented stories highest. College subjects' mean wpm for reading for details was 291, while for general overview, it was 461 (significant at .01 level). Comprehension scores were significantly (p < .01) higher for overview than detailed questions, while no order effect was uncovered.

Vandever and Neville (510) studied the efficiency of different instructional procedures involving word shape or distinctive feature cues in teaching average and retarded children to recognize words. A final sample of 112 subjects from first and second grade classrooms were divided into 2 groups on the basis of IQ's from the *Otis-Lennon* (85 or above defined the average sample) and the WISC (84 or below defined the retarded sample). A 16-word list, including 2 practice words and utilizing a contrived alphabet of unfamiliar symbols, was presented to each subject in one of 3 conditions. The experimental conditions consisted of 1) the nonsense words outlined by a thin black line in order to accent shape, 2) the words similarly set off by a black background to emphasize shape cues to a greater extent, and 3) the words presented with no shape cues. All instruction was directed at distinctive features of the individual letters. Instruction was in groups of 4 to 6, and employed a taped script, words on slides, and individual workbooks. Subjects learned the words, reviewed them, and then were tested on each word using a multiple choice format identical to that used in the workbooks. Data were analyzed using a 2-way fixed effects univariate ANOVA. Results indicated that non-retarded subjects learned more words than retarded subjects. There was no main effect for experimental condition; however, differences existed relative to the 2 subgroups. Although method of learning the words had no effect on the performance of nonretarded subjects, mildly retarded subjects appeared to learn significantly ($p < .05$) more words when letter cues were emphasized instead of configuration cues within the context of a whole word approach. Differences in word attack strategies of children were discussed.

Barron and Pittenger (22) examined the effects of stimulus familiarity, lexical meaning, and orthographic structure on "same-different" judgments of tachistoscopically presented words. Stimulus words were of 3 types: 1) 12 real words (each with a Thorndike and Lorge frequency of at least 100 per million) each containing 3 consonants (C) and 2 vowels (V) in 4 different C-V structures—CVCCV, CCVCV, CVCVC, and CCVVC; 2) 12 pseudo-words generated from the real words and each containing the same letters and C-V structure as the real word (*e.g.*, the real word "DANCE" had a pseudo-word counterpart *CANDE*); and 3) 12 non-words, each containing the same letters as the original real words, but only in CCCVV and VVCCC structures (*e.g.*, "DNCAE"). Each word in each of the 3 sets was then paired randomly with another word from the same set that was either the same or different, each pair containing the same C-V structure. All words were placed on 2 x 2 slides and presented to 8 paid undergraduate subjects; subjects controlled the presentations.

Sessions were conducted over a 5-day period, during which reaction times (RT) were recorded and subjects were shown the various words and asked to make "same-different" judgments for each. Analysis of data for "same" judgments indicated that overall, real words were reacted to more quickly than pseudo-words, and pseudo-words more quickly than non-words. A separate analysis on days 2 through 5 revealed a familiarity effect. No significant differences were found for "different" judgments, indicating familiarity did not affect these judgments. It was found that RT decreased as the number of letters by which 2 words differed was increased. Bigram and trigram frequency analyses indicated that differences in RT's for "same" judgments between real and pseudo-words could not be attributed to differences in orthographic regularity. To test for the extent to which implicit speech might be governing RT's for "different" judgments, 1-syllable and 2-syllable words were analyzed separately. No differences in RT's for real words were found. The results are discussed in relation to models of the word recognition process.

Blaiwes (37) assessed the effects on learning of 3 different formats for presenting instructions to the learner. In the first format (logical tree), subjects were given instructions for solving a mock communication controller's task involving boxed questions; depending upon a negative or positive response, subjects were referred by arrows to different solutions. The second format (coding) was identical to the logical tree, except that subjects were also provided with 1- or 2-word codes preceding the boxed questions. The third format (short sentences) provided subjects with a short declarative sentence followed by examples illustrating conditions stated in the sentence. Three testing sessions were conducted. In session 1, subjects were given both printed and taped instructions, and were then tested and corrected on their recall of the instructions. In session 2, subjects were presented with the first set of 30 problems to be solved; the solution was to be worked on a control console, and subjects were not allowed to refer back to instructions once they began. In session 3, subjects returned one week later for a second set of 30 problems in a delayed retention condition. The problems presented to subjects were varied in terms of difficulty. The ANOVA indicated no overall effects on response time, accuracy, or reference to instructions due to different instructional formats. However, Newman-Keuls tests indicated that the coding group performed significantly ($p < .01$) better on more difficult problems. Both coding and short sentence groups performed better ($p < .01$ and $p < .05$, respectively) on another group of problems designated as difficult.

Frase and Kreitzberg (153) examined the effects of different types of directions on the incidental and relevant learning of 130 college students. Four types of experimental directions were constructed for a short biographical passage: 1) word-positive—"Learn the information in all of the sentences that begin as follows . . ."; 2) word-negative—"Learn the information in all of the sentences except those that begin as follows . . ."; 3) topical-positive—"Learn the information in all of the sentences which deal with the topics below . . ."; and 4) topical-negative—"Learn the information in all of the sentences except those which deal with the topics below. . . ." Each subject received one set of directions for which 11 of the 23 experimental sentences were relevant and for which the other 11 sentences were incidental (the last summary sentence in the passage was not included in either set). Topical directions were constructed and validated with 20 subjects in a previous pilot study. Control group directions told subjects to learn the entire passage; 10 minutes were allowed for studying the material. All directions were read by the subjects. A 54-item short answer recall comprehension test was constructed as the criterion measure. An ANOVA was used to analyze the factors of first/second set of directions, positive/negative directions, word/topical directions, relevant/incidental recall, and recall for facts from the first/second part of the text. Dunnett's and Newman-Keuls' tests were used for specific comparisons. Results indicated no main effect for word/topical directions; however, an interaction between type of directions and relevant/incidental recall showed for incidental facts to be significantly ($p < .05$) lower for word than for topical directions. Positive/negative directions showed no effect on learning. Differences in recall of first and second parts of text were attributed to stylistic factors. Overall, the 2 sets of directions produced negligible differences in learning.

Glavin (172) assessed the long term effect of referral to resource rooms using token reinforcement systems on the conduct and achievement of subjects in grades 2 through 6. A total of 208 referred subjects from 5 schools were used in the study; half remained in regular classes (controls) while the other half participated in the resource facility (experimentals) on a part-time basis. Teacher appraisal of referrals indicated that most exhibited conduct problems, and most were emotionally disturbed. Data were gathered to permit study of the following hypotheses: resource room referrals would demonstrate significantly higher scores on the reading and math sections of the *California Achievement Test;* resource room referrals would have better attendance and receive lower scores than controls on the conduct-problem dimension of the Behavior Problem Checklist; and experimentals would be referred less often as behavior problems and would score higher than would controls on the *Children's Intellectual Achievement Responsibility Questionnaire* (used as a measure of locus of control in the present study). For the followup analyses, data were collected for subjects registered in 36 public and 2 non-public schools in Philadelphia. Measures of behavior, locus of control, and achievement were administered again, either by examiners or present teachers. Data were analyzed with an ANOVA and by chi-square techniques. An examination of 13 variables revealed that when the students were in the resource room, both social behavior and academic gains in reading and arithmetic were significantly improved for the experimental subjects. However, social behavior while in the regular classroom was not different from that of the controls. Hence, the 2- and 3-year followup study indicated no long term changes.

Coles and Foster (86) conducted 3 experiments in which they studied the effect of underlining relevant portions of text on subsequent comprehension, under different conditions of prior directions. In Experiment 1, a 1,050-word passage from a scientific magazine was transformed into a list of 61 statements. Ten judges rated each of the statements as *core, supporting detail*, or *background detail*. Two versions of the passage were then prepared: a control version and a version that had the 28 *core* statements (or their prose equivalents) underlined. A 7-item multiple choice pretest and a 16-item multiple choice post test were prepared; the post test items referred only to portions of text that were underlined. In the first study, 20 subjects were given one of the 2 versions of text and 3.5 minutes to read the text. The task was preceded by no special instructions. Gain scores (pretest score subtracted from the post test score) were computed for each subject; experimental subjects tended to score higher gains, but t tests indicated the difference was not significant. In Experiment 2, similar procedures were followed. However, the 38 subjects were given written instructions that important points had been underlined to help them understand the article better. Results were nearly identical to those of Experiment 1. Experiment 3 used the same experimental materials; however, subjects were exhorted to follow the SQ3R study method while reading the article. Experimental subjects were also informed of the underlining. Results of Experiment 3 indicated that subjects given *both* underlined text and SQ3R study directions had significantly ($p < .05$) superior gain scores compared to controls.

Lefton and Spragins (280) conducted 2 experiments examining word processing strategies of subjects from the first grade to the college level. In Experiment 1, 8 letter first- and fourth-order pseudo-words were presented tachistoscopically. Masks, consisting of cross hatching, covered all the letters. Presentation time was varied and subjects were asked to name as many letters as they could see; guessing was encouraged. Each subject was allowed 10 practice trials. An ANOVA indicated that all the main effects were significant at the .001 level or beyond. Increasing grade level showed increases in accuracy, fourth-order approximations elicited more accurate performance, increasing stimulus duration increased accuracy, and accuracy on the right 4 letter positions was lower than on the left 4 positions. Experiment 2 employed virtually the same stimulus materials; however, only half of the letter array was masked—either the left or right half. The main effects in Experiment 2 were similar to those of the first experiment. Additionally, masking the right 4 letters showed greater accuracy overall than masking the left 4 letters. The results were discussed relative to the nature of processing in the transfer of information from the iconic to short-term memory.

A model for the recognition of tachistoscopically presented words was developed and tested by Rumelhart and Siple (424). The model, termed multicomponent, is based on previously developed models. The multicomponent model was tested, using 5 undergraduates who were first given training in the recognition of single letters in the type font utilized. Then, subjects were each presented with 726 three-letter strings for 2 milliseconds each. Students were asked to respond with 3 letters after each presentation with no feedback given. Various analyses and predictions of the results are made using the model.

Tatum and Friden (491) conducted 2 studies to determine if words and pictures are coded and processed in different fashions. In the first experiment, reaction times (RTs) of same-different judgments were measured for pairs of words which differed in syllable length (one versus 3). Word pairs exhibited 3 possible kinds of relationships: conceptual similarity, physical identity or different. Subjects were to press one key if the pair of words belonged to the same category and a second key if they belonged to a different category. A total of 8 trials were given, but only the data from the last 4 trials were analyzed. RTs were longer for the 3-syllable words than for the one-syllable words. The authors suggest that their data support a notion that subjects verbally coded the stimulus pairs and that the verbal coding was sequentially organized with respect to the syllables or phonetic components of the words. In the second experiment, pictorial representations of the words used in Experiment 1 were employed and procedures were the same. No correlation was found between RTs and the syllable length of the picture names. The authors felt that this indicated that subjects were utilizing an imaginal code for the pictures and that this code involved parallel, rather than sequential, processing.

The purpose of the report by Timmons (501) was to determine if delayed auditory feedback during oral reading of difficult material affects retention. Four groups of 20 undergraduate students each, randomly assigned, read a difficult prose passage of 300 words and took a 25-item, multiple choice comprehension test over the material. Group 1 read aloud under normal conditions and was given the retention check immediately; Group 2 read under normal conditions and took the test 24 hours later. Group 3 read under 0.20-second delayed auditory feedback and was tested immediately; Group 4, also reading under 0.20-second delay, was tested 24 hours later. Significantly higher scores were obtained by students reading under normal conditions than by those reading under delayed feedback. In addition, significantly higher scores were obtained under immediate recall than under delayed recall.

McConkie and Meyer (323) replicated and extended an earlier study investigating the manipulation of reading strategies through the use of payoff conditions. Seven reading passages selected from 4 forms of the *Davis Reading Test*, Series One, were used. Each passage contained 7 higher level comprehension questions of a multiple choice type. Undergraduate psychology students (N = 70) were randomly assigned to one of 5 experimental conditions. In the control condition, subjects received neither payoff instructions nor feedback. Three conditions involved subjects in reading under a payoff structure which rewarded them for reading quickly. Points were given for each correct response with the number of points dependent upon the time involved in reading. In 2 of these conditions subjects were given complete feedback on their performance; for one of these 2 conditions, P(S)-F, each point received was worth 3-fourths of a cent. In the other of these 2 conditions, P(S)-Game, no cash was given but subjects were motivated under a game-type atmosphere. In the third payoff condition for speed, P(S)-NF, no feedback was given following each passage read, but a total score on all 7 passages was given. The fifth condition, P(R), the emphasis was on retention with each point worth one cent. Thus 4 variables were studied for their influence on reading speed and performance: existence of a payoff structure, the form of the payoff, type of payoff, and presence or absence of feedback. Payoff conditions had a greater influence on reading speed than on test performance. However, the existence of a payoff structure had little effect by itself, but the form of the structure produced significant changes in reading rate. Reading speed tended to increase under payoff conditions emphasizing speed and to decrease under the control condition. Under all conditions, performance tended to increase over passages. Data on the effects of feedback were not clear.

Lowell and Vitro (297) investigated the differential effects of word meaning and sequence of stimulus presentation on the processing of letters, words, and digits. The 80 boys and 61 girls from 6 intact second grade classes were randomly assigned to one of 6 treatment conditions. The treatments were based on the various possible combinations of sequences of the digits (D), letters (L), and words (W) used. Children viewed the visual stimuli on slides and were asked to write them after a 3-second presentation. Mean raw scores for subtests of D, L, and W were analyzed for differences. The highest scores were obtained for W with D next and L, the lowest, regardless of order of presentation. No significant differences between mean total scores were found.

IV-6 Visual perception and reading

Binkley, Maggart, and Vandever (33) examined degree of reading retardation in relationship to observed perceptual deficits. A total of 42 subjects from seventh grade remedial reading classes were administered the *Metropolitan Achievement Test* and found to be at least 2 years below grade placement. Further, all subjects had scores of 75 or above on the *Otis Quick Scoring Mental Ability Test* and were from low-income backgrounds. The 42 subjects were divided into 2 subgroups—low and average—on the basis of scores from the *Bender Visual Motor Gestalt Test.* Both groups were similar in chronological age and IQ, with the average group being slightly higher in both respects. Additional tests were then administered in order to determine if BVMGT scores differentiated among children retarded in reading. These measures included the *Gates Reading Survey* and the *Gates Basic Reading Test*. The *California Test of Personality* was also administered to all subjects. Univariate F tests indicated significant ($p < .05$) differences between the groups on the GRS and the GBRT (administered 5 months later), but no differences on the CTP. The role of perceptual abilities in reading was discussed.

Frith (156) investigated the visual search efficiency of students in an effort to explain the letter reversal phenomenon in reading by a schematic theory of perception. In Experiment 1, subjects were presented with 12 visual arrays, each containing 24 items, 4 of which were target items to be cancelled. Four of the arrays involved real letters (*N* and *Z*), while the rest dealt with unfamiliar symbols. Targets consisted of the mirror images of the context items in a given array. Cancellation completion rates were significantly higher ($p < .001$ and .05 respectively) for the real letters *N* and *Z* in a reversed context than for the reversed *N* and *Z* in a real context. None of the other symbolic visual arrays showed this difference. Experiment 2 required subjects to scan through reversed and normal letters for targets; for example, *Z*'s had to be found among reversed *N*'s and among normal *N*'s. No significant differences were found on this task. In Experiment 3, a variety of letters were put in stimulus arrays following the previous method. Highly confusable letters (*b*, *d*, *p*, and *q*) were arrayed with one another, while other letters and symbols were arrayed together (*O* and *Q*; *S* and 2). Overall, reversed letter context resulted in significantly (from .001 to .05) longer cancellation times than normal letter context. Experiment 4 required subjects to deal with 24 item arrays having different ratios of target to context stimuli (targets now numbered 8, 12, 16, or 20). A reversed context effect was obtained for arrays having 8 and 12 targets, but when the ratio of targets to context stimuli went above half, the reversal effect disappeared.

The purpose of a study conducted by Benenson (29) was to utilize Froehlich's *Visual Memory for Designs Test* (VMDT), testing both short- and intermediate-term visual memory, in an effort to increase the efficiency of predicting end of first grade reading achievement. The VMDT short- and intermediate-term test of visual memory (15 seconds and 30 minutes respectively) yields measures of 1) memory for form, 2) spatial orientation, and 3) sequence with a content of abstract designs, controlling for prior knowledge. Criterion variables consisted of the *Gates-MacGinitie Readiness Skills Test* (GMRST) and the Vocabulary and Comprehension measures from the

Gates-MacGinitie Reading Test (GMRT-V and GMRT-C). The VMDT was administered in December, the GMRST in September, and the GMRT in May. Several stepwise analyses of multiple regression using the VMDT and the GMRST as predictors of performance on the criterion (GMRT) were conducted. The VMDT, in combination with the readiness test, accounted for only from 1.0 to 2.0 per cent of additional criterion variance in Vocabulary and Comprehension achievement. The author discusses the results in terms of a probable lack of predictive utility of visual measures in predicting reading success of upper and middleclass first graders, and the indication from the data that auditory ability, and more likely, auditory-visual integration, is far more useful in predicting end of first grade reading achievement.

Holt-Hansen (219) studied the responses of dyslexics and non-dyslexics to the Hering-Illusion. Dyslexics were chosen on the basis of the frequently occurring symptoms of reversals and inversions; an attempt was made to insure that the intellectual level of the 2 groups was roughly equivalent. Two series of experiments were conducted using modifications of the Hering-Illusion, which consists of 2 vertical parallel lines and a series of additional lines that radiate in all directions from a circle that connects the parallel lines. The effect of the illusion is to make the parallel lines appear to curve, and under certain circumstances, to oscillate back and forth like a rubber band. In Experiment I, the sections of the parallel lines that intersect the circle were removed and replaced with a series of letter "*d*'s" on the left and "*b*'s" on the right. A similar modification in Experiment II was performed using "og" on the left and "go" on the right. In both situations, dyslexics and normals were presented the illusion under varying rates of stroboscopic light. The illusion also produces perceptions of rhythm in movement, and subjects were asked to respond to the rhythm. Results of the 2 experiments were nearly identical; although all subjects experienced movement of the lines, all dyslexics also experienced reversals of the letters in the form of 180° shifts around a perpendicular axis. None of the normals experienced this reversing of letters. Perceived reversal of letters appeared to take place during the ingoing movement of the lines. The author discusses the relationship of these results to other experiments involving perceptual differences in dyslexics.

Koppitz (268) investigated the relationship among measures of memory for numbers, visual motor ability, and reading achievement in 8 and 9 year olds. Three groups of subjects were tested individually: Group A included subjects with learning disabilities who could not read, Group B contained subjects who could read but demonstrated learning problems in other areas, and Group C which functioned as the control group. Subjects in Groups A and B were matched for Full Scale WISC IQ's (mean 100.1). Reading recognition scores on the *Wide Range Achievement Test* in mean grade equivalents for Groups A and B were 1.6 and 3.9 respectively; Group C subjects were all at a 3.0 level or better in reading according to teacher ratings. Two tests were administered to all subjects: The *Bender Visual Motor Gestalt Test* (BT) and *Visual Aural Digit Span Test* (VADS). The VADS consisted of 4 subtests: 1) aural presentation of a series of digits and oral recall (AO), 2) visual presentation of a series of digits and oral recall (VO), 3) aural presentation of a series of digits and written recall (AW), and 4) visual presentation of a series of digits and written recall (VW). Each subtest of the VADS presents 7 digits to the child which he then reproduces forward from memory (reliability data is included). Group mean test scores were compared by computing chi-square values. Comparison of BT scores between Group A and Group C and between Group B and Group C indicated significant ($p < .001$ and .05 respectively) differences in favor of controls; no differences in BT scores were revealed between Groups A and B. All 4 VADS subtests differentiated significantly between Groups A and C, while no significant differences were found between Groups B and C. Three of the 4 VADS subtest scores (AD, VO, VW) and the total scores significantly differentiated Groups A and B. Subtest VO ($p < .001$) appeared to be most closely related to reading achievement. No significant relationship was uncovered between the BT and VADS for any of the groups.

Rayner and Kaiser (396) studied the effects of various types of letter replacements (mutilations) on the oral reading and comprehension of good and poor readers. In Experiment 1, 6 paragraphs ranging in length from 102-115 words and at a fifth grade reading level were reconstructed. Eighteen per cent of the letters in each passage were altered, either in the initial, medial, of final positions. Alterations were made such that word shape was either maintained or altered. Twelve sixth grade subjects (*Lorge-Thorndike IQ* mean score was 124; word meaning and paragraph meaning mean scores from the *Stanford Achievement Test* were 7.6 and 8.2 respectively) read each passage aloud, saying the words they thought *should* be there. Practice sessions were conducted to familiarize subjects with the procedure. When subjects finished reading, they answered 3 true-false questions about each passage to assure that they were reading for meaning. Task results were measured 3 ways: 1) time required to read; 2) number of misreadings, including substitutions, omissions, and additions of words; and 3) number of blanks or unattempted words. A 2 × 3 factorial design followed by Newman-Keuls multiple comparisons were used in data analyses. When word shape was altered by substituting non-visually confusable letters, it took subjects considerably longer to read than when a visually confusable letter was substituted. Beginning letter mutilations resulted in longer reading times ($p < .01$) than medial or end mutilations. Generally, error type data were very similar to reading time data. When the shape of the words had been altered, the subjects gave more incorrect answers to comprehension questions than when the shape had been maintained. Experiment 2 utilized the same materials and procedures with older readers at approximately the same reading level; these 12 subjects had a mean IQ of 101 and standardized reading scores at least 2 years below grade placement. Reading time data from the second experiment were identical to those of the first experiment. Misreading errors were similar to those in the first experiment, and identical to the reading time data for the second experiment. In fact, the total error pattern was very similar to that obtained in the first experiment. The authors discuss the various aspects of a word that are used in its recognition.

In the report by Rude, Niquette, and Foxgrover (421), kindergarten pupils were given a battery of 4 visual and auditory discrimination subtests before summer vacation and again in the fall. The tests given were The *Wisconsin Tests of Reading Skill Development* (WTRSD)—Word Attack, Preliminary Form, Forms I and II, Level A; *Shapes, Letters and Numbers*, and *Initial Consonants*. In addition, the *Murphy-Durrell Reading Readiness Analysis, Letter Names Test*, Part I, *Capital Letters* was administered. The *SRA Primary Mental Abilities Test* was given in May of the kindergarten year as a measure of intelligence. A multiple analysis of variance technique was used to determine the significance of change scores between the 2 testings. There were significant increases in the mean test scores between May and September with the exception of the *Initial Consonants* test of the WTRSD. Greatest gain was on the WTRSD—*Shapes* test. No significant sex differences in retention were found. A significant relationship was found between intelligence scores and retention on the WTRSD—*Shapes* and Initial *Consonants*.

Timko (500) studied the effect of presentation mode and letter similarity on visual discrimination learning at first grade level. He also investigated the effects of differential initial learning conditions on subsequent paired-associate learning. Subjects were randomly selected from beginning grade 1 children in one elementary school and were exposed to one of 4 training conditions. Half the subjects were given initial training with a simultaneous mode of stimulus presentation and half, with a successive mode. Within each mode of presentation, equal numbers of children were given either similar letters (*b, d, g*) or distinctive letters (*m, s, c*). In the simultaneous condition, pupils viewed a letter on one page of a booklet and were asked to select the letter on the opposite page that matched it. In the successive presentation mode, pupils studied the stimulus letter on one page and then the page was turned to expose the response alternatives. A criterion of 4 consecutively correct responses was established for both modes of presentation during pretraining. After criterion was attained, children were immediately given a paired-associate transfer task involving verbal labels (words) for the letters. Again, 4 consecutively correct responses determined criterion performance. Analysis of variance techniques showed significant differences on presentation mode and on letter similarity as well as an interaction. The simultaneous mode required fewer trials to criterion than the successive, and the distinctive letters were more easily discriminated than the similar letters. Similar letters were learned more rapidly by the simultaneous mode, but no differences in mode were noted for distinctive letters. A significant difference was found only on letter similarity for the transfer condition with children who had responded to similar letters requiring more trials to criterion than did children who had seen distinctive letters.

Vellutino, Pruzek, Steger, and Meshoulam (514) explored the notion that the visual-perceptual skills of good and poor readers are comparable. Three groups were used as subjects: one group each of poor and normal readers unfamiliar with Hebrew; and a group of normal readers who were learning Hebrew. Groups consisted of 15 boys and 6 girls each and included children in grades 4, 5, and 6. Poor readers were identified by reading specialists and had been involved in remedial work for one or more years. Subjects were selected from pools screened for gross physical and neurological defects, auditory and (uncorrected) visual acuity problems, severe emotional disorder, and frequent school absences. Final selection of subjects was based on intelligence and achievement test results.

Only children with a Verbal or Performance IQ of 90 or above on the *WISC* were included. The *Gilmore Oral Reading Test* was used to assess reading achievement. Poor readers had grade equivalent scores 2 or more years below their grade placement, and normal readers had scores at or above grade level. Subjects were also given a 35-item test of phonic skills and the *Bender Visual Motor Gestalt Test*. Groups were comparable in age and visual-motor functions but differed on both reading and IQ scores. Subjects were presented with 3 sets of 3 words each, where there were 3-, 4-, or 5-letter Hebrew words for the respective sets. Children observed the sets of letters on a screen and then required to copy them from memory. Correct reproductions as well as error counts were tabulated. Multivariate analysis of covariance and multivariate F statistics were employed in analyzing the data. Non-Hebrew poor and normal readers manifested no differences in proportion of correct responses as well as in orientation, omission, sequencing, and substitution errors. The performance of both non-Hebrew groups was below that of the Hebrew group on the first 3 variables. These results held when group differences in intelligence were controlled. The authors feel that their data provide support for the notion that poor readers sustain no organic deficiency in visual-spatial processing and that poor readers' difficulties in orientation and sequencing of letters is attributable to other than neurological dysfunction.

IV-7 Reading and language abilities

Gantt, Wilson, and Dayton (166) explored the relationships among oral language production, listening ability, examiner race, and examiner status in 2 samples of black third graders. A total of 96 subjects, half from Title I and half from non-Title I schools, participated in the study. The 2 groups of 48 subjects from each type of school were divided into 3 groups of 16 subjects each; each group of 16 subjects was assigned to one of 3 types of testers: black adult male, white adult male, or black sixth grader. Each child was asked to tell a story about a picture. The interviews were taped and testers were allowed to prompt subjects for responses. Tape recordings were subsequently analyzed for standard and divergent English syntactical characteristics using the Baratz criteria. Oral language production was scored for divergent and standard characteristics, and total number of words produced. Additionally, 3 scores of listening ability (listening-words, listening-sentences, and total-listening) were collected on each child with the *Durrell-Reading Series*. For the combined sample, all correlations between measures of oral language production and listening were significant, but little shared variance between the 2 types of measures was evident. There was a general trend of positive correlations with production of standard English and negative correlations with divergent English. Results also indicated significant differences in listening ability between the 2 samples favoring the non-Title I children. A 2-way ANOVA and Newman-Keuls test indicated that non-Title I subjects produced more standard English, but no school differences were evidenced for divergent English. *Post hoc* analyses indicated that the black adult tester elicited significantly more divergent English than either of the other 2 testers. Additionally, within the Title I school, the 2 black testers elicited significantly more words than did the white adult tester. Finally, a number of differences resulted in analysis of categories of standard and divergent English production. Limitations, implications, and recommendations of the study were discussed by the authors.

A followup study comparing reading scores of economically disadvantaged grade 2 pupils with other children was reported by Sassenrath and Maddux (431). A second purpose of the study was to discover whether the boys or girls, the monolingual or the bilingual disadvantaged children performed better on a group reading test. Subjects were 20 boys and 20 girls, one-half monolingual and one-half bilingual of each sex. Scores from the May administration of the *Cooperative Primary Test*, Form 23A in Reading, were obtained. A 2 × 2 analysis of variance on the raw scores was calculated. Monolingual children performed better than bilingual children, but only the bilingual boys scored significantly below the mean for the school district.

The study undertaken by Liberman, Shankweiler, Fischer, and Carter (288) focused on how well young children can identify the number of phonemic segments in spoken utterances and how this compares with their ability to deal similarly with syllables. Subjects were 46 preschool, 49 kindergarten, and 40 grade 1 children. Two experimental groups were formed: phonemic segmentation (Group P) and syllable segmentation (Group S). An analysis of intelligence test scores as assessed by the *Goodenough Draw-A-Person Test* revealed no significant differences between the 2 experimental groups. Children were asked to repeat a word or sound given by the examiner and to tap out the numbers (1 to 3) of phonemes or syllables in the stimulus item. Training trials preceded the actual experimental task. Both trials to reach a criterion of 6 consecutive correct trials and mean errors to pass or fail were used as measures for comparison. Syllables were more easily segmented than phonemes. At the nursery school level, none of the children could segment by phonemes and only 17 per cent of kindergarteners and 70 per cent of first graders could do so. In contrast the ability to segment by syllables was demonstrated by 46 per cent of nursery school children, 48 per cent of kindergarteners, and 90 per cent of first graders. Seven per cent of preschoolers, 16 per cent of kindergarteners, and 50 per cent of first graders achieved criterion in 6 trials on the syllable task. No child at any age level attained the criterion in the minimum time on the phoneme task.

Simons and Johnson (459) investigated the effects of using textual materials written in black dialect with second and third grade black children. It was hypothesized that the children in the study would read dialect texts with greater comprehension, greater use of contextual information, greater use of graphophonic information, and fewer dialect related miscues. All subjects were from urban Title I schools. Two types of texts were developed, standard and dialect versions, based on 4 talking animal stories. Grammatical features that were altered for the dialect version included copula deletions, habitual "be," conditional features, grammatical-lexical features, negations, possessives, pronoun agreement, irregular verbs, auxiliary verbs, and pronominal appositions. All stories were equivalent in terms of readability according to the Fry formula. All subjects were given warm up and practice sessions prior to testing, and testing sessions were taped. Comprehension was measured by a multiple choice test of 6 items, unprompted recall, prompted recall, and dialect recall. The last 3 measures were scored on the basis of 23 points identified in the text and judged to be important to text comprehension. Indirect measures of comprehension included frequency of substitutions, omissions, and insertions. Use of contextual information was judged by frequency of self-corrections, syntactic acceptability both preceding and following context, semantic acceptability, and repetitions. Graphophonic information use was measured by letter similarity, word shape similarity, and word attack skills. Miscues brought about by dialect differences were also considered. Results of univariate and multivariate analyses indicated no significant differences between dialect texts and standard texts in terms of the comprehension measures, taken totally or individually. This same pattern was also evidence in terms of context information and graphophonic information use. Overall, no evidence was found that black dialect speakers read dialect texts any better than they read standard texts. The authors provide a discussion of limitations of the study.

Crockett (92) factor analyzed language performance data from 353 children, aged 6 through 13, in an effort to determine the minimum number and nature of language skills required to describe total language performance. Subjects were chosen from 5 schools in Victoria; all were judged normal in language development. A total of 7 experienced examiners conducted the individual testing. The *Neurosensory Centre Comprehensive Examination for Aphasia* consisting of 20 language subtests designed to measure 38 variables was administered to each subject (the author provides a description of the various submeasures). Correlations of interrelationships among the subtests were computed, followed by a principal components factor analysis; only factor loadings of 0.5 were considered significant. Seven factors accounted for 58.4 per cent of the total variance. Factor I (17.3 per cent of the total variance) was described as the ability to manipulate auditorally and visually presented symbolic material in order to make a motor response. Factor II (10.4 per cent of the total variance) involved the ability to receive, retain, and recall spoken sentences; this factor involved but was not strictly dependent upon memory. Factor III (8.6 per cent of the total variance) involved auditory language comprehension. Factor V (5.7 per cent of the total variance) reflected syntactical and semantic complexity of subject-produced sentences. Factor VI (5.7 per cent of the total variance) record, recall, and perform simple cognitive operations on digits. Factor VII (4.6 per cent of the total variance) involved the ability to understand, retain, and recall digits. Additional statistical manipulations were performed on the data in order to partial out age-group differences, reducing the total number of factors and, at the same time, accounting for more total variance.

Smith (469) explored the grammatical facility of 203 eighth and ninth graders by recoding written materials judged to be at different difficulty levels. Specifically, 2 passages were written at 3 different levels of syntactic complexity: 1) kernel sentences, 2) eighth grade difficulty level, and 3) skilled adult level. The resultant stimulus materials consisted of 6 passages dealing with 2 different topic areas written at 3 levels of sophistication. Subjects were chosen from 4 high schools in Georgia. Testing procedures enforced no time limit, nor was any verbal assistance provided. Subjects were randomly distributed the materials and asked to rewrite the passage they received "in a better way." All rewriting of the stimulus materials was analyzed by number of words, T-units, clauses, words per T-unit, words per clause, and clauses per T-unit. Confidence intervals were established for the various hypotheses. Results indicated support for 3 of the original 7 hypotheses generated: 1) subjects did increase complexity when rewriting the kernel input paragraph; 2) subjects' rewriting of the skilled adult input paragraph was greater in complexity than the output of the subjects' rewriting of the kernel input paragraph; and 3) subjects' rewriting of the skilled adult input paragraph was greater in complexity than the output of the subjects' rewriting of the eighth grade input paragraph. Subjects did not appear to significantly decrease the complexity of the adult level material, nor change the complexity of the eighth grade passage. The author discusses the results in relation to similar studies of syntactical development in children.

Miller and Hintzman (334) explored the relationships among various word count measures and a measure of syntactical complexity in assessing 20 Newbery Award books. Using the Syntactical Complexity Formula (SCF) offered by Botel *et al.*, 500-word samples were drawn from the first, middle, and last chapters of each book and analyzed. Each sentence was assigned a syntactic score; then all scores were averaged to yield one syntactic score per title. The same samples were also scored with 6-word count measures; this procedure utilized beginning and ending sentence boundaries, subject nouns, and main verbs as points of reference from which to compute the word counts. Each of these 6 scores was averaged for each book, yielding 6-word count measures for each title in addition to the SCF score. The word count scores were subsequently correlated with the SCF score and used in a regression analysis to predict syntactic complexity. All 6 of the correlation coefficients were positive and significant ($p < .001$), ranging from .51 to .92. A total of 85 per cent of the variance of the SCF score was accounted for by the variable MV-##e (distance in words between the main verb and the ending sentence boundary). The authors provide a description of the word count measures and a discussion of the educational significance of the results of the study.

Errors made by 65 innercity third and fourth graders on the *Gray Oral Reading Test* were analyzed by Hunt (225) in a study to assess the effect of pronunciation errors attributable to the use of black dialect on oral reading scores. Tests were scored first according to the manual (Score I) and were then rescored not counting errors attributable to the use of black dialect (Score II). For the total group the mean difference was significant between the 2 scorings of 1.8 for Score I and 1.9 for Score II. There were no significant differences in the means between scores of third and fourth graders. But the mean difference for the girls was significantly greater than that for the boys. Also, a significant difference was found between the mean scores of better and poorer readers when the group was divided in half on the basis of test performances. The mean differences of the better readers was equivalent to one-half year in grade level. When errors were counted on score passages only, 46 per cent of the errors made by the total group were attributable to the dialect.

IV-8 Vocabulary and word identification

The effects of word frequency and contextual richness on word identification was examined by Pearson and Studt (372), using 36 first graders and 36 third graders who were at or near grade-level achievement in reading. Subjects were asked to guess a word that fit into a blank space for each of 12 sentences which varied in terms of contextual richness. Quality of context was rated at 3 levels as highly definitive and specific, definitive, and indefinitive. The target word was one member of a pair of high-versus-low frequency synonyms. Tests were administered over a period of 3 days, and the subjects were tested individually for approximately 15 minutes. The test was treated as a guessing game, and the experimenter gave letter cues to those subjects who needed assistance to achieve a correct guess. Repeated guesses were encouraged. Each incorrect guess promoted an additional letter cue. In this way, results provided information on the proportion of the total word needed to achieve identification. A repeated-measures analysis of variance design was used to analyze the test scores. The findings indicated that all 3 factors—grade, context, and frequency—affect word identification. Third-grade subjects identified the target words, particularly those of high frequency, with fewer visual cues than did the first graders. More letter cues were needed to identify low frequency words even in context judged as rich than for the high frequency synonyms.

Rosenthal and Resnick (413) hypothesized that the way in which an arithmetic word problem is written and the positioning of certain elements in the problem would affect both error rate and time required to solve the problem. Specifically, 4 hypotheses were offered: 1) if events in a word problem are mentioned in reverse order to their actual chronological occurrence, error rate will be higher; 2) reversing the order of mention in word problems will result in longer solution times; 3) word problems in which the unknown set is the starting set will result in more errors (symbolically: __ + y = z instead of x + y = __); and 4) unknown starting set problems will require more time to solve. Additionally, the effect of gain versus loss verbs (*e.g.*, bought/sold) on error rate and latencies was investigated. A total of 32-word problems were generated and presented to 63 third graders in 2 experiments on 5 × 8 inch cards via a specially constructed response box that allowed for precise measurement of latencies. Subjects were allowed prior practice with the apparatus in solving number problems and were given feedback after every fourth problem. Subjects were asked to read the problems aloud and to get as many problems correct as possible. A 2 × 2 × 2 ANOVA with repeated measures on every factor was used in the analysis. All 3 main effects were significant (order of mention, type of verb, and position of unknown set). There were 2 significant interactions: position of unknown set with order of mention and type of verb. Specifically, there were more errors when 1) the unknown set was the starting set, 2) the order of mention was reversed, and 3) a gain verb rather than a loss verb was used. In terms of latencies, only the problems with the unknown starting sets resulted in more time for solving the problem. The authors discuss the results with regard to theoretical models of problem solving.

Rozin, Bressman, and Taft (416) tested children for their understanding of the sound-orthography relationship. A total of 218 children in kindergarten through grade 2 were used as subjects. The 6 groups of children came from both suburban and innercity schools. Subjects were individually tested with 8 pairs of words, one of which was short (3-4 letters) and the other of which was long (9-11 letters). Words were pronounced for the child and he was then asked to point to each target word. In addition, 2 groups were required to identify which word, the short or long, fit into either a short or a long box. In this task, subjects were also required to verbalize the reason for their choice and were scored on the appropriateness of their response. Generally, innercity kindergarten children performed poorly on the task, while a majority of suburban kindergarteners and innercity grades 1 and 2 children performed well. Many children in the innercity grade 1 did not perform well, however, even after a year of reading instruction under a phonics-oriented program.

Knafle (266) was interested in the effect of color cues on various aspects of the word recognition process in primary grade children. Two tasks were required of her kindergarten to grade 3 subjects. In Task 1, the 211 subjects were presented with 10 of 30 CVC trigrams taken from Readers 1, 2, and 3 of the *Merrill Linguistic Readers*, while 15 of 60 CVC trigrams taken from the same source for Task 2 were presented. Children viewed a stimulus word for several seconds prior to its removal and were then asked to point to the response choice most similar to the stimulus word. In Task 1, the response cards contained 2 choices and in Task 2, 3 choices. For Task 1, an experimental group was shown the initial consonants of stimulus word underlined in red while the control group received the same word without underlining. In Task 2, each stimulus word contained one red letter in the experimental group. The placement of the red letter varied so that it appeared 5 times in each of the beginning, medial, and final positions; and no letter of the alphabet appeared in color more than once. In Task 1, kindergarten and grade 1 experimental subjects' tendency to match according to first letter was increased. In Task 2, color cues in the first letter position were utilized more frequently by all grades. In control groups, subjects matched by first letter more frequently than second or third letters.

Downing and Oliver (120) broadened the scope of an earlier study investigating young children's perception of a word. Subjects were given 5 examples each of the following 8 different classes of auditory stimuli: abstract non-verbal sounds (hissing), identifiable real-life non-verbal sounds (coughing), isolated phonemes, syllables, short words, long words, phrases, and sentences. All stimuli were presented via tape recorder and children were asked to respond "yes" to single words and "no" to all other sounds. Subjects were 7 boys and 7 girls from each of the following age groups: 4.5 to 5.5, 5.6 to 6.5, and 6.6 to 8.0 years. All children were from predominantly middleclass to upper middleclass. Results were analyzed first in terms of the number of correct responses given at each age level for each of the 8 classes of auditory stimuli and then analyzed by means of a 3 × 2 × 8 multivariate analysis of variance. Significant main effects were found due to age and auditory stimulus class plus an interaction between these 2 factors. Isolated phonemes and syllables were confused with spoken words at all age levels. The younger 2 groups tended to confuse identifiable non-verbal sounds, phrases, and sentences with words; but these confusions disappeared with older children. The 5.6 to 6.5 age group had significantly fewer correct responses to long words than to short words and to long words than to non-verbal real-life sounds.

Rode (409) explored children's ability to decode phrases and clauses at 3 developmental levels in order to determine the effects of syntactic structure on eye-voice span. Subjects were 18 average readers from each of grades 3, 4, and 5. Forty-eight target sentences, written into 3-sentence paragraphs with vocabulary from grade 2 readers, were used to measure eye-voice span. Two types of sentences were presented: Type A, consisting of a 2-word noun phrase, a 3-word verb phrase, a conjunction, a 3-word noun phrase, and a 2-word verb phrase; and Type B, a 3-word noun phrase, a 2-word verb phrase, a conjunction, a 2-word noun phrase, and a 3-word verb phrase. Only one experimental sentence appeared in each of the 48 paragraphs. Subjects read aloud with a light on the stimulus material, and were to report all words beyond the one being spoken when the light went out. Three scores were derived: an eye-voice span score (EVS), a corrected scoring (CS) which was a more lenient measure of EVS, and a syntactic analysis score derived by measuring the number of times each subject's EVS extended to the end of a noun or verb phrase and terminated at that point. Older subjects had the longest EVS span. The type of syntactic unit (noun or verb phrase) influenced the eye-voice span of younger readers. The author felt that the findings supported a notion of the clause rather than the phrase as a unit of decoding.

Singer, Samuels, and Spiroff (460) studied the effect of pictures and context on the identification of a word. The 80 grade 1 and 84 grade 2 subjects were randomly assigned to one of the following 4 experimental conditions: 1) word alone, 2) word in association with a picture, 3) word embedded in a sentence, and 4) word in a combination of sentence plus picture. The 4 stimulus words were presented in an artificial alphabet under each condition. A study-test procedure was used in presenting words with the target words only presented on the test trials. A maximum of 12 trials was given, but the procedure was stopped if a child had all 4 words correct on 2 successive trials. The word alone condition had the fewest trials to criterion and the sentence-picture combination, the greatest number. The word alone condition also produced the largest number of correct responses.

Levels of meaning in reading were explored by Lundsteen (300) in a study of 79 third and 111 sixth graders. Mean IQ of the subjects was 112 for the third and 113 for the sixth grade. Among the measurement instruments used in the investigation, 2 experimental tests provided the chief source of data as reported. One was called

Choose a Meaning Test (CMT), which sought to elicit from students their level of meaning preference for given words in terms abstract, functional, and concrete categories. The second test was author-constructed named as *Creative and Critical Paragraph Test* (CCP), which provided answer choices phrased in abstract, functional, and concrete discourse. Test reliabilities for the 2 tests were reported as .71 for CCP and .88 for CMT. Test results showed that significant differences were found on all comparisons between third and sixth grade test scores on CMT and CCP for each category of meaning. Among category comparisons, third graders tended to prefer the concrete level in comparison with an increase in the number of abstract choices for the sixth graders. Of particular interest was the finding that among third graders there was a greater preference for the abstract level in paragraph reading with 32 per cent occurrence, while only 6 per cent occurrence was found for the abstract level of meaning for the test of individual words as stimuli.

The usefulness of teaching certain word attack skills in reading was evaluated by McNeil (328) in a study of 24 competent and 24 incompetent readers from a sample of 150 children, ages 7-9. Reading competency was judged according to per cent errors made on an author-constructed oral reading test. Children were administered individually the test, and those who made 2 per cent errors or less were classified as competent readers and those who made 50 per cent errors or more were classified as incompetent readers. Both groups were administered 15 objective-based measures from the *Instructional Objectives Exchange, Reading: Word Attack Skills.* Mean scores were compared for both groups. The assumption was made that an unsuccessful performance on any measure of a particular word attack skill by competent readers indicated that the skill was in fact not essential and was declared a false prerequisite. On the objective-based measures, Selecting Words with Affixes, Distinguishing Meaning of Homographs, and Selecting Sounds of *r*-Controlled Vowels were found to be false prerequisites. Seven skills were found highly related to reading competency. The subtests were Determining the Number of Syllables, Matching Vowel Sounds in CVCe letter combination, Matching Vowel Sounds in Words with Two Consecutive Vowels, Differentiating Long from Short Vowels, Identifying Base Words, Matching Sounds of Diphthongs, Recognizing Compound Words. Four Skills were identified with both groups of readers as having similar proficiencies on the objective-based measures. These 4 skills were considered as possibly necessary but not of sufficient value.

Pearson and Kamil (371) compared the amount of time required to process uninflected nouns and uninflected verbs. The stimuli presented to the 13 undergraduate subjects consisted of 12 verbs each of 4, 5, 6, or 7 letters. Four forms of each verb were produced by adding 4 stems. A second word list of 192 nouns—24 of each letter length from 3 to 10 letters—was also included in the study. The basic design employed was a repeated measures factorial with form class, word length, and affix type as factors. A general increase in recognition time as a function of length was found. Inflectional endings added a constant amount of time to recognition latencies. The effects of length and affixes appeared to vanish with practice. The authors interpreted their findings as supporting a letter-by-letter interpretation of the recognition process modified by a possible morphemic segmentation strategy for affixes.

Nursery school children's understanding of words used in beginning reading programs was assessed by Quigley (388). Children were in their last term of attendance at nursery school. Social status, determined by father's occupation, showed 40 per cent of the group to be from the upper working class, 22 per cent from professional and managerial, and 26 per cent from semi-skilled and unskilled. Two per cent were from fatherless homes. Children were tested with the *English Picture Vocabulary Test I*, the British standardization of the *Peabody Picture Vocabulary Test*. The first 50 words from each of 6 reading series were identified. With overlap eliminated, a total of 134 words formed the item pool. A final test of 73 words was constructed. A test-retest coefficient of .92 was found for 15 children given the test twice in 3 weeks. When total word knowledge scores were obtained, no child scored lower than 66 per cent, and the mean was 88 per cent. No significant sex differences were found. Forty-four of the 73 words were not known by all the children.

Mackworth and Mackworth (304) had the Coding Test administered to 80 children, ages 7 to 12. The test is designed to investigate the ability to match words by sight or by sound. In addition, the Patch Test, requiring children to compare a picture with one that had just been seen was given. Teachers in grades 1 to 6 were asked to select 5 good and 5 poor readers from their classes and to limit their choices to children with IQ's above 100. In addition, 10 children classified as dyslexics were included. The *Gray Oral Reading Test* was also administered and pupils were ranked in each grade according to their speed on the test. The 5 fastest and 5 slowest readers in each grade were assigned to the 2 groups of good and poor readers if their performance agreed with the teachers' estimates.

Within grades, all groups of good readers were significantly better than poor readers on the Coding Test, with the exception of first graders. Across grades, the good readers of grade 3 were significantly better than all the poor readers. There was no significant improvement in errors on the Coding Test from grade 3 to grade 6 in either group. No relation between reading ability on the Gray Oral and performance on the Patch Test was found.

An experiment to assess the ability of young children to perform analysis and synthesis within the modalities of sound alone and sound combined with sight was designed by Roberts (402). In 2 consecutive years, all 5- and 6-year-old children were tested for their ability to recognize letters and to give their related sounds as a criterion for inclusion in the study. Fluent readers were excluded from the study. The first population consisted of 40 children who were presented with 4 categories of reading tasks: 1) synthesis, in which the blending of isolated sounds into a word was required; 2) analysis, in which the sound of a word was given and the child was required to provide the isolated sounds; 3) synthesis with sight, in which the child was given a word visually and required to blend the separate sounds evoked by the letters; and 4) analysis with sight, in which given the sound of a word, the task was to provide the separate sounds and write down the appropriate letters. Five 10-word lists consisting mostly of 3-letter words were developed and piloted for comparability. With each task, examples were given and trials conducted until the child gave 2 correct responses. If a subject did not reach this level, the task was abandoned and a score of 0 was given. Work on the actual list was then begun with no formal time limits established. An analysis of variance was used to analyze the data. Purely auditory synthesis was found to be easier to perform than the other tasks. Analysis by sound and sight combined was found to be the most difficult.

An errorless discrimination training approach was studied by Egeland and Winer (133) in teaching innercity, preschool children to discriminate certain letters of the alphabet. Two groups were involved: one was taught using errorless discrimination training (EDT), and the other was taught to discriminate letters using a reinforcement-extinction (RE) approach. The 64 subjects were randomly selected from 2 pre-kindergarten programs and then randomly assigned to one of the 2 treatments. Both groups were presented the discrimination problem in a match-to-sample format in which subjects were to discriminate between 2 letters by selecting one that matched the standard. Four letter combinations were used: *R-P*, *Y-V*, *C-G*, and *K-X*. For each group, 3 warm-up trials, 10 training trials for each letter pair, and 4 post test trials for each pair were given. In the EDT group, the relevant cue was highlighted in red on the first training trial and then gradually faded. Subjects in the RE group were given 10 training trials, using all black letters. Instructions were the same as in the EDT group, except that RE children were given feedback and EDT subjects were not. A repeated measures ANOVA was used to analyze the number of errors made for each pair of letters within each block. For the training sessions, a significant difference was found between the 2 groups with the mean number of errors 4.06 for the EDT group and 16.89 for the RE group. Similar results were obtained on the post test data.

Hatch, Polin, and Part (205) hypothesized that native and non-native speakers of English would not mark the same number of letters in a simple letter cancellation task in content vs. function words under different levels of vocabulary and syntactical difficulty, and that word stress would affect task performance. In Study I, 40 native and 40 non-native (but proficient) speakers of English were instructed to mark all letter *a*'s in a 210-word reading passage under 4 conditions: 1) frequent vocabulary/simple syntax, 2) frequent vocabulary/complex syntax, 3) infrequent vocabulary/simple syntax, and 4) infrequent vocabulary/complex syntax. Vocabulary frequency was established with the Lorge-Thorndike list. All subjects were told they would take a short comprehension test following the cancellation task. The overall ANOVA indicated that both groups marked significantly ($p < .001$) more letters in content than in function words. As vocabulary frequency decreased and syntactical difficulty increased, only the non-native speakers marked fewer letters. In Study II, 36 subjects were given the task of crossing out *e*'s and *c*'s; many of the *c*'s appeared as part of the 2-letter digraph *ch*. This time, 24 non-native speakers were divided into 2 groups: those in an elementary and those in an intermediate English class. The 3-way ANOVA showed that all subjects cancelled more letters in content than in function words. Native speakers ignored letters in many function words, while the intermediate bilingual group marked more letters in function words. The least proficient bilingual group marked nearly as many letters in function words as in content words. Subjects marked fewer *c*'s in digraphs than in single letter instances; as language proficiency increased, the frequency of marking *c*'s in digraphs decreased. In Study III, 54 subjects marked *a*'s and *o*'s in a

440-word passage that had been judged for primary and secondary vowel stress by 2 linguists. Again, there were 3 groups: 18 foreign subjects in an elementary English course, 18 foreign subjects in an intermediate English course, and 18 native speakers. The ANOVA demonstrated that all 3 groups marked more stressed than unstressed vowels; the number of unstressed vowels that were marked decreased with an increase in proficiency in English. The authors provide a discussion of their results relative to an acoustic scanning hypothesis for reading.

Edwards (132) assessed the effects of idiomatic language on comprehension of reading passages. Four sets of passages were used in the study: 1) a set of 18 passages, all of which contained idiomatic language; 2) a set of 18 passages, 12 of which contained idiomatic language; 3) a set of 18 passages, 6 of which contained idiomatic language; and 4) a set of 18 passages, all of which were written in literal language. The passages were the same in each condition, except for the use of either literal or idiomatic language; each passage was a short statement followed by 4 alternative answers and a fifth alternative that allowed subjects to write in their own answers. A panel of 4 judges demonstrated 100 per cent agreement concerning the content validity of each passage and its accompanying question. A total of 18 idioms were used in the test (*e.g.*, "wild goose chase"). Subjects were 256 eighth graders from 8 heterogeneous classes in 2 schools in Canada. Regular school staff members in each school administered the tests, providing ample time for all subjects to complete the task. Data analyses consisted of a one-way ANOVA and Newman-Deuls multiple comparison tests. All tests containing idiomatic language were significantly ($p < .00001$) more difficult than the literal language test. Except for the 2 idiomatic conditions containing the highest number of idioms (18 and 12), tests were increasingly difficult as the number of idioms increased.

Bart (23) investigated the effectiveness with which high school students between 14 and 19 years old dealt with various logical propositions. A 24-item test with 24 different binary propositions such as "if P, then Q" served as the measure of understanding of logical connectives. Subjects were asked to respond to each item in one of 3 ways: always true, always false, or sometimes true and sometimes false. Items containing disjunctive propositions were slightly more difficult than those containing conjunctive propositions, but the difference was not significant. Negated propositions, however, were significantly ($p < .03$) more difficult than non-negated propositions. Finally, implicative propositions were found to be more difficult to understand than conjunctive and disjunctive propositions ($p < .05$).

IV-9 Factors in interpretation

Pearson (370) examined linguistic variables as they affect children's comprehension of verbal material relative to hypotheses involving 1) readability analysis, 2) deep structure analysis, and 3) synthetic chunking. Regarding the analysis of readability, it was specifically hypothesized that longer sentences would be more difficult to comprehend, inclusion of subordinating and coordinating conjunctions would increase comprehension difficulty, and highly embedded forms would be more difficult than low embedded forms. Results of the test of these hypotheses were expected to shed light on the theoretical positions advanced within the confines of research in transformational grammar and conceptual abstraction. In Experiment 1, 64 third and fourth graders were divided into 4 groups as high and medium readers at each grade level (according to teacher estimates). Materials consisted of single and groups of simple sentences typed on index cards. A 4-step method was used in generating the sentences, involving transformations of similar sentences portraying adjectival and causal relationships and accompanying *wh-* questions. A total of 64 items based on 8 different sentences were generated. Each subject was tested individually and the session was tape recorded. Data analyses of the results of Experiment 1 indicated that nearly every subject responded correctly to every form; of a total of 512 responses, there were only 11 errors. Number of subordinated responses did differ relative to cue-present and cue-absent conditions. In terms of adjectival and causal responses, subjects responses tended to match the stimulus input. Moreover, cohesive stimulus forms tended to yield better and more stable comprehension. In Experiment 2, 24 fourth graders of average reading ability were presented with materials similar to those used in Experiment 1; however, subjects were given a question and asked to choose the response they preferred (all were correct). With both adjective and causal relations, subjects indicated a marked preference for the more cohesive and grammatically complex forms. In Experiment 3, 8 fourth graders were given successive lexical cues in recalling specific causal sentences. Cueing had a positive effect on sentence recall, as well as output. The results of the 3 studies are discussed relative to the original models of linguistic processing: readability, deep structure, and chunking.

Edwards (131) attempted to determine the effect of idioms on children's understanding of prose. The 256 grade 8 subjects involved came from 4 randomly selected classes in each of 2 schools and were randomly distributed into 4 experimental conditions within each class: Nonliteral 1, Nonliteral 2, Nonliteral 3, and Literal. In Nonliteral 1, all the 18 passages of prose in the test contained idiomatic language. In the Literal condition, all passages were rewritten in literal English. Nonliteral 2 and 3 contained 6 and 12 passages, respectively, rewritten in literal English with the rest in idiomatic language. An author constructed, multiple choice test was developed to assess comprehension of the idiomatic expressions and their literal counterparts. A one-way ANOVA design was used to test the hypothesis that the idiomatic passages would be more difficult to comprehend than the literal passages. Results indicated a positive relationship between the incidence of idioms and difficulty of the material. This difficulty held true across sex and IQ.

Jongsma (244) examined the syntactical complexity of reading passages from standardized tests as it affected subsequent reading comprehension of fourth graders. Eight standardized reading tests were chosen for study that had the following criteria in common: the major purpose of each was to measure reading comprehension, each was intended for fourth graders, each was developed or revised within the last 10 years, each employed a multiple choice format, and each was designed for group administration. Five passages were randomly chosen from each test for study; passages containing poetry or dialogue were excluded. A syntactical analysis scheme proposed by Strickland was then used to assess all 40 passages. The 25 most frequently used oral language patterns of fourth graders, as identified by Strickland, were considered "high" frequency patterns. All other patterns were considered "low" frequency patterns. The proportion of high to low frequency patterns in the passages was computed using a Frequency Index. Ten passages were then randomly chosen from the pool of 40 passages to be used as the comprehension measure. The 10 passages and their accompanying questions in the original format formed the Conventional Reading Comprehension Test. Each of the 10 passages was rewritten, using high frequency language patterns resulting in the Syntactically Controlled Reading Comprehension Test. Each test utilized the same 45 multiple choice items. A total of 176 fourth graders from 5 schools read the passages and answered the comprehension items; subjects were allowed to refer back to the passages. In addition, data on sex, age, previously measured reading levels (Intermediate level of the *Stanford Achievement Test*), and IQ (*California Test of Mental Maturity*) were collected. The analysis of language patterns revealed 244 different patterns with frequency ratings of from 1 to 39. A preliminary one-way ANCOVA was used in data analyses, followed by a fixed effects 2-way ANCOVA. Results indicated: 1) that there is a wide diversity of language patterns in standardized reading tests in which the syntactical complexity is not systematically controlled, 2) only about one third of the language patterns in these tests can be considered high frequency patterns, and 3) there is no significant difference in the comprehension performance of fourth graders between original and rewritten versions of these passages. The author provides a discussion of the results relative to findings of other studies, and reports reliability and validity data for the reading passages used in the study.

Peltz (374) studied the effect on comprehension of rewriting instructional materials to more closely approximate writing patterns of tenth graders using the materials. A total of 34 tenth graders reading at the fifth stanine on the *Metropolitan Reading Test* were first asked to write 4 themes of approximately 250 words each. Then, 8 selections from a social studies text the subjects used in school were chosen as stimulus materials. Both student writing and text materials were analyzed by an instrument designed to quantify the frequency with which 51 different transformations were generated (7 types of simple, 34 types of embedding, and 10 types of conjoining transformations were considered in terms of T-units). Two cloze tests (exact word and synonym) with every fifth word deletions were constructed for the 8 unaltered and 8 repatterned versions of the text; 5-item multiple choice tests were constructed for 4 of the passages. A comparison of the 8 unaltered articles and the student themes revealed that the authors used a greater mean number of words per sentence, per T-unit, and per clause than subjects. However, there were no differences in the use of either subordinate or coordinate constructions. Authors embedded fewer nominal and relative clauses, and at the phrase level, embedded more than twice as many kernel sentences by using nominal phrases to replace nouns. The total number of kernel sentences generated per 100 T-units was greater for authors than for subjects. The 8 social studies articles that were subsequently repatterned were similar to subjects' writing patterns on all indices, except that of "Mean number of words per T-unit" which was probably a function of vocabulary difficulty level. The data were analyzed using the Mann-Whitney Non Parametric U and analysis of variance. After testing sessions were completed in which subjects were randomly assigned to various groups, the original hypotheses were tested. When measured for reading comprehension by either an exact word or synonym cloze procedure, subjects reading the repatterned versions of the text scored significantly ($p < .05$) higher. Repatterning had no effect on multiple choice test scores.

Peltz (375) investigated the effect of restructuring social studies text materials to conform to tenth graders' writing patterns, and the subsequent effect on comprehension. A total of 34 subjects from a high school in New York generated essays of approximately 1,000 words. The student essays were then analyzed for syntactical patterns and compared to similar analyses of 8 representative portions of a social studies text. Fifteen measures were used in assessing all passages; these measures were reduced to a synopsis of clause to sentence length factors consisting of 5 ratios, yielding the mean number of words per clause, clauses per T-unit, words per T-unit, T-units per sentence, and words per sentence. A number of embedding transformations at the clause, phrase, and word levels were also analyzed. Mean number of words per sentence, per T-unit, and per clause was significantly greater for authors than for students. Once the 8 text portions were repatterned, only the mean number of words per T-unit was significantly greater for the prepatterned versions than for the subjects' essays. Comprehension of the original and repatterned versions of text was measured by exact word cloze tests, acceptable synonym and exact word cloze tests, and multiple choice tests. One-way ANOVAs indicated that subjects' comprehension scores as measured by cloze tests were significantly ($p < .05$) greater for the repatterned versions of text. Repatterning of text had no significant effect on comprehension as measured by multiple choice tests. The author discusses the implications of the findings and provides a description of the procedures used in the analyses and repatterning of the writing samples.

Evanechko, Ollila, and Armstrong (141) analyzed children's writing in order to determine which skills in this language mode were common to reading. The measure of reading employed was the *New Developmental Reading Test Intermediate Level* containing subtests of Vocabulary, Information, Relation, Interpretation, Appreciation, Literal Comprehension, and Creative Comprehension. A total of 118 sixth graders from British Columbia were asked to write a theme entitled, "The Last Person on Earth." Student themes were analyzed by a trained research assistant using a modified version of the Botel-Granowsky formula for measuring Syntactic Complexity. This formula analyzes written material on the basis of 13 measures concerned with structural and thematic complexity. Correlational and multiple linear regression analyses were used on the data. Correlational analysis indicated a high degree of intercorrelation among the language measures and a significant ($p < .05$) correlation between the language measures and reading measures. The stepwise regression analysis was aimed at identifying the best combination of measures of writing behavior to predict reading performance. Of the 13 language measures used as predictors, 4 contributed significantly to the prediction of reading achievement. There were: 1) Number of Communication Units, 2) 2-Count Structures, 3) Sentence Patterns B, and 4) Average Number of Words per Communication Unit. The remaining measures did not contribute significantly. The single best predictor, Number of Communication Units, was described to be essentially a measure of the fluency of expression in language by indexing the number of ideas expressed. The next best predictor of reading achievement was 2-Count Structures, a measure of the flexibility or complexity and sophistication of expression in written language. Regardless of the reading subtest, these 2 variables contributed most to the regression equation suggesting a strong relationship with reading achievement.

Muma, Perry, and Gallagher (347) explored the effect of minor semantic variations within the confines of a sentence matching task employing syntactically similar sentences. A total of 31 college subjects in 2 experiments were presented with 12 target sentences and a set of 24 target and distractor sentences from which the original targets had to be matched. Manipulations on properties of the object noun included: 1) plural/singular nouns, 2) animate/inanimate nouns, 3) single/double syllable nouns, and 4) 3 forms of morphemically varying derived forms. The dependent variable was time to read, search, locate, and record the necessary target sentences with their match. Results indicated that response times were not significant for the singular/plural factor or for the single/double syllable factor. No differences were found for derived forms. However, a significant ($p < .01$) difference was found between words with animate and inanimate properties. Results are discussed relative to the factor of animateness as a potent semantic property in sentence perception.

Two black and 2 white examiners administered standard English and non-standard English forms of the Reading Comprehension section of the *California Reading Test* in a study by Marwit and Neumann (315) using 60 black and 53 white second graders. The hypotheses were not supported that black subjects comprehend non-standard English materials better than those in standard English and that white subjects comprehend standard English materials better than those in non-standard English. For each form, white subjects generally obtained higher scores than did black subjects, and within each race, standard English presentations generally resulted in higher scores than did non-standard English presentations. Black subjects performed as well as white subjects under the white examiner in standard English condition only. Black subjects obtained significantly higher scores under standard English format when tested by white examiners than when tested by black examiners. Lack of support for the hypotheses was discussed in relation to other studies on linguistic inferences in reading.

Performances on cloze passages in and out of context were examined by Erickson and Hansen (140) in a study using 100 fifth graders from 4 classes in 2 Madison elementary schools in Wisconsin. Subjects represented a national sample as measured by the *Sequential Test of Educational Progress*, Series II, Form B. Experimental messages were about 800 words in length to allow five 60- to 70-word passages that were randomly selected from each message. The 800-word length also allowed about 75 words to remain intact between the passages. Both messages had a fifth grade readability level. In addition, 2 types of materials social studies and literature were used. Different forms of cloze tests were randomly assigned to the subjects. The resulting data were analyzed using a 2 × 2 analysis of variance design. Subjects scored higher on literature materials than social materials, but scores on the cloze material out of context were not significantly different from scores in context. No significant interaction between type of material and the in- or out-of-context condition was found. Also reported were mean comparison of individual cloze scores for types of material by contextual treatment.

The relationship between reading comprehension and ability to recover deep structure, as well as the extent to which children can be taught deep structure recovery, was dealt with by O'Donnell and King (360). Fifty seventh graders, 60 per cent of whom were black and most of whom were ranked below the 20th percentile in reading comprehension, were exposed to 14 lessons in deep structure recovery over a 15-week time period. A group of 120 students ranked in comprehension around the 13th percentile served as the reference group. Subjects were administered pre- and post-measures used in previous research; these were the *Deep Structure Recovery Test* (DSRT) and a series of cloze tests. The DSRT is comprised of 25 items, each of which contains 3 sentences; the task is to choose the sentence which is not a paraphrase of the other 2. Reading comprehension scores were obtained with the *California Test of Basic Skills.* Data analyses consisted of the transformation of scores to *T*-scores and *z*-scores, and the use of a technique for estimating causal influences in lagged correlational data. Results indicated little success in teaching subjects deep recovery skills, since there was a tendency for reference groups to show more gain than experimentals. Analysis of causal influences indicated that cloze scores used to define reading comprehension skills exerted more influence on deep structure recovery abilities than vice versa, and influenced comprehension test abilities. CTBS scores were influenced by DSRT skills, but in a negative direction for the experimental group. The authors discuss the results relative to limitations of the experimental sample.

Ehri and Wilce (134) studied the effects of variations in printed language designed to reflect intonation cues on the reading speed and comprehension of 40 third and 40 fourth graders. Two stories of approximately 500 words each were presented in 4 conditions using 3 type sizes: 1) an intoned version in which words receiving more pitch and stress were of larger type, 2) a form class version in which different type sizes were ascribed to different parts of speech, 3) a random text version that used different type sizes randomly, and 4) a standard text version. Children in each condition were matched for reading ability on the basis of scores from the *E.T.S. Cooperative Primary Test*; all subjects were above the 50th percentile on this test. Subjects were tested individually. Each subject went through the first passage with the experimenter, each taking turns reading aloud and responding to comprehension questions. Subjects then read the second passage silently. The examiner timed the subjects completion of each page with a stopwatch. When finished, the child was asked to retell the story to the examiner, and then his memory for specific parts was tested with 21 short-answer questions. Data analyses consisted of an ANOVA and Dunnett's tests. As expected, fourth graders' free and prompted recall was significantly better than that of third graders. Within grade differences revealed only that third graders given the intoned passage required significantly less ($p < .025$) time than those given the standard text. None of the other main effects approached significance; comprehension was found to be substantial and equivalent among all the groups.

DeVilliers (107) examined short-term and long-term retention of sentences by 63 college students under conditions of inclusion of definite or indefinite articles. In the initial stages of the study, a separate group of 27 students rated the story form of the sentences (definite articles) for the degree of centrality of each sentence to the theme of the story, and for the image evoking value of each sentence (on a 7-point scale using indefinite articles). Subjects also indicated the 5 sentences that were most central and least central to the story theme. Thirty-three subjects were then divided into 2 groups: definite-immediate (DI) and indefinite-immediate (II); each group heard a tape recording of the story in the corresponding condition. Thirty additional subjects were divided into 2 groups: definite-long term (DL) and indefinite-long term (IL); they were tested 24 hours later. All 63 subjects were asked to write as much of the story as they could recall; order of recall was not stipulated. Data from both immediate and long-term recall were scored according to the number of content words or synonyms recalled and the number of sentences for which the essential meaning was recalled. For each group of subjects, recall was further measured by the number of subjects who attempted to recall a given sentence, and by the percentage of content words or synonyms recalled. Correlations were then calculated among sentence centrality, imagery value, order of presentation, recall condition, and degree of recall. Original rankings of image value and centrality to theme of the definite and indefinite sentences indicated that the passages were useful for investigating the effects of these variables on recall. Mann-Whitney U tests compared subjects from each group on each measure of recall. Subjects who recalled the definite sentences as a story were significantly better at recalling the words and sentences from the passage. Subjects who processed the sentences as a story recalled them in almost the same order as they had been presented. Generally, thematically connected discourse is better recalled than unrelated sentences or words if it is recalled as a story, and a recency effect existed regarding the immediate recall of unrelated sentences. In both recall conditions using unrelated sentences, those sentences high in imagery value were recalled better;

however, when subjects processed the sentences as a connected story, imagery value had little effect on recall.

Davis (99) reports results of a factor analysis study of 2 experimental reading tests. The tests comprise the *Chicago Criterion-Referenced Record in Mechanics of Reading and Reading Comprehension.* The first is wholly a test of decoding skills and is composed of 10 parts, while the second is concerned primarily with testing comprehension skill and is comprised of 6 parts. The tests utilize oral directions and no time limits. The tests were administered to a total of 229 elementary school children for purposes of validation and factor analysis. For grade 2 and 3 subjects, recognition of the initial and final sounds in words, knowledge of word meanings, and understanding paragraphs were the most difficult skills. The largest amount of improvement between grades 2 and 3 and between grades 5 and 6 took place with respect to knowledge of word meanings and understanding paragraphs. Overall, perceptual items were easier than phonic or comprehension items. Test scores were transformed into normalized standard scores as a basis for multivariate analysis, using principal-axis component analysis on the matrix of intercorrelations of 15 part scores at grades 5 and 6. Data analyses indicated the emergence of verbal comprehension, phonics, and accuracy of perception as the 3 fundamental factors underlying proficiency in reading. The author further discusses use of the standard error of measurement as an index of accuracy of measurement for the interpretation of test scores as opposed to reliability coefficients.

Carpenter (70) studied the effect of semantically similar adjective pairs and truth value on the comprehension of sentences by 44 college students. Comparative sentences were constructed using pairs of sentences containing marked or unmarked adjectives. The term that refers to extent is the unmarked term (*e.g.*, tell), while the term that refers to lack of extent is the marked term (*e.g.*, short). Each adjective was used in constructing one true and one false sentence. A total of 36 sentences were constructed in this fashion, while an additional 36 sentences were constructed using adjectives unclear in marking (*e.g.*, smoother-rougher). All subjects read the sentences and responded to a verification task in which they judged sentences using various combinations of adjectives as either true or false. Latencies were recorded. Then, 20 subjects engaged in a recognition memory task in which they were presented the alternatives corresponding to the true unmarked, false unmarked, true marked, and false marked counterparts of the original sentences in order to pick out the one they had seen in the previous task. Subsequently, 24 subjects engaged in a recall task in which 72 noun prompts were taken from the 36 experimental sentences, either subject or object, and presented to subjects who were then asked to write down whatever they could remember of the sentence. Results indicated that sentences with an unmarked adjective were verified significantly ($p < .01$) faster than those with a marked adjective. No interaction between marking and truth value was found, nor did truth value have a significant effect on comprehension. In the recognition task, sentences with a marked adjective were recognized as well as those with unmarked adjectives. Overall, the results did not indicate a bias towards responding with unmarked adjectives; however, certain adjective pairs indicated large response differences, among them the unmarked adjectives *faster* and *taller* and the marked adjective *narrower* were recognized from 22 to 29 per cent more often. Marking did have a significant effect on recall. Sentences with an unmarked adjective were recalled verbatim 14 per cent more often than sentences with a marked adjective ($p < .01$). Unmarked adjectives like *faster*, *taller*, *deeper*, *wider*, and *better* were recalled from 17 to 38 per cent more often. Truth value of sentences appeared to have little effect on recall, while the first noun (subject) was a consistently better ($p < .01$) prompt than the second noun in verbatim recall. Results are discussed in terms of reconstruction, storage, and retrieved processes used in sentence comprehension.

Carpenter and Just (71) offered a model of sentence comprehension and 2 tests of the model, emphasizing number of mental operations as the primary determinent of sentence comprehension latencies. In Experiment I, sentences were presented with accompanying pictures requiring the 60 college subjects to verify the truth value of each sentence as it related to the picture. Sentences were of 6 types: True or False Affirmative (*e.g.*, "It's true that dots are red."); False or True Predicate Negative (*e.g.*, "It's true that the dots aren't red."); and False and True Denial (*e.g.*, "It isn't true that the dots are red."); The order of the 6 sentence types as presented above denotes an ever increasing number of mental comparisons that, hypothetically, subjects would need to engage in for sentence verification and comprehension. Further, in each of the 3 pairs of sentence types, "False" and "True" sentences would also be differentiated by the accompanying picture of 16 dots. A total of 36 sentence-picture combinations were presented to subjects, with the subjects controlling the presentations and latencies recorded. As predicted, the mean latencies increased linearly with the number of hypothesized constituent comparisons; variance among the 6 means was significant ($p < .01$) as the model accounted for nearly 98 per cent of the variance. Experiment II was conducted in order to partial out the effects of reading and representation time from verification latencies. A total of 24 subjects were given 2 seconds to read the original sentences; latencies were measured only from the onset of the picture. Results in Experiment II were nearly identical to those of Experiment I, except for a slight difference in mean latencies. The authors provide an extensive review of literature in the area of sentence comprehension, as well as a thorough discussion of their results and results of other investigators relative to the Constituent Comparison Model.

IV-10 Oral reading

In an effort to determine whether synthesizing concepts from the *Informal Reading Inventory* (IRI) and the *Reading Miscue Inventory* (RMI) would yield a more definitive diagnosis, Williamson and Young (542) analyzed the performance of 30 selected elementary subjects with a fifth grade instructional level (IRI) with a subset of questions from the RMI. Each subject read at his instructional and frustrational levels, as defined by Betts' IRI criteria, in basal readers and from a science series. Errors or miscues were analyzed according to their graphic similarity, sound similarity grammatical function, correction, grammatical acceptability, semantic acceptability and meaning change with the printed word. Results of the descriptive study indicate that reading miscues are aids to diagnosing reading performance. Subjects' performances demonstrated that reading behavior is different when reading at the instructional and frustrational levels. When reading at the frustrational level, subjects tended to adhere more closely to the sound and graphic materials represented in the text than when reading at their instructional level. Miscues made at the frustrational level had a higher frequency of having the same grammatical function as that intended in the text than when reading at the instructional level. Grammatical and semantic miscues acceptable to a paragraph or the whole text are more apt to occur at the instructional level of reading. Grammatical and semantic miscues acceptable only in the sentence or phrase in which they occur are produced more often when reading at the frustrational level.

Simons (458) explored the effects of dialectical differences in young black children as they influence reading behavior. Simons hypothesized that homophones whose spelling was closer to black dialect pronunciation would be easier for speakers of that dialect to read. Two combined lists of 36 words each based on the Carroll, Davies, and Richman word frequency count were prepared: a Real and a Nonsense list. The Real list was comprised of pairs of words, one of which was in real dialect (RD) and the other in real standard form (RS) (*e.g.*, *feel* for *field*). A second list followed the same pattern using nonsense standard (NS) and nonsense dialect (ND) words (*e.g.*, *dold* and *doal*). Each word was typed on an index card and presented to the subject, who was asked to read the word out loud. Responses were taped and scored by 2 independent scorers. In the RS and NS conditions, standard or dialect pronunciations were counted as correct. In the ND and RD conditions, only standard English pronunciation was counted as accurate. Subjects were further designated as High or Low readers by dividing the RS score at the median. Data were analyzed by multivariate and univariate ANOVAs, allowing analyses within reading levels and within grade levels. No significant differences were found regarding High readers at any grade level. For grade 2 Low readers, RS scores were significantly ($p < .05$) greater than RD scores. For grade 3 Low readers, RS and NS scores were significantly ($p < .001$) greater than RD and ND scores. At grade 4, Low readers, on the other hand, scored significantly ($p < .02$) better on RD than on RS words. Overall, little support was gained for the original hypothesis.

Wheat and Johns (533) explored the reading deficiencies of 6 third graders using the Reading Miscue Inventory (RMI) in an effort to compare this procedure with more traditional procedures of diagnosing reading problems. Subjects had a mean IQ (*Slossen Intelligence Test*) of 111, a mean reading expectancy of 4.0, a mean instructional reading level of 1.4, and a mean level of reading disability of 3.2. Each child read an unfamiliar passage and was asked to recall as much of the story as possible. The oral reading of the passage was taped and studied for miscues; 9 questions were subsequently asked about each miscue evidenced. Profiles of each child were then constructed relative to the 3 basic cueing systems studied: grapho-phonic, syntactic, and semantic. Results indicated a high degree of graphic and sound similarity between their miscues and the text. All subjects had greater strengths in the grapho-phonic cueing system than in the meaning cueing systems. Of the total miscues made, one-third to one-half were not corrected. Agreement between the findings of the RMI and the *Classroom Reading Inventory* existed for 3 of the subjects, while these findings were in direct opposition for the other 3 subjects. The authors provide descriptions of each child tested as well as recommendations regarding the RMI.

IV-11 Rate of reading

Marcel (313) examined the amount of material gained from each fixation and the effect of contextual constraint on fixation gains among trained adults and children age 11 years. The adults were 30 college undergraduates, half of whom were ready to take an advanced reading course emphasizing speed. The other half had completed the course and shown marked improvement. The children, ages 10.5 to 11.5 years, were 48 chosen from 82 on the basis of the *National Foundation for Educational Research Reading Test*, EH3. The 12 boys and 12 girls who read slowest, yet failed no more than one comprehension question, were the experimental group. The experimental materials for college students were 3 sets of 10 individual test sequences plus 3 practice sequences of first, third, and sixth order approximations to English prose. The sequences, containing 3 to 8 letters, were generated by undergraduates not in the experiment. Each sequence was typed in lower case letters on a pair of 4 × 6 inch white cards so that one line plus one word appeared on the first card and the continuing line appeared on the second card. For children the sequences were generated by pupils a year beyond the experimental subjects in school and typed the same way. The procedure was to allow subjects in school as much time as they needed to read the first line on the first card silently and then to say the first word on the second line orally. Then card 2 was shown and immediately followed by a blank card. At that time, subjects were asked to report as much as possible of what they had seen on the second card. Exposure time for the second card was 200 milliseconds (msec.) for adults and 220 msec. for children. The 4 aspects of the reports scored per trial were: 1) total number of correct words, 2) number of typespaces between first and last pair of adjacent letters correctly reported, 3) number of erroneous whole words given after the last correctly reported word, and 4) the 4 categories of erroneous words—grammatically acceptable only, visually acceptable only, both, or neither. For both populations, analyses of variance were performed on word and typespace scores with order of approximation and reader speed as factors. Results showed that higher orders of approximation yielded significantly (.001) larger numbers of both words and typespaces for both populations. Besides, there was a significant main effect of reader speed on number of words reported in both groups but no significant effect on typespace scores in adults; however, the effect was significant (.001) among children. Interactions of order of approximation × reader speed were significant for both groups, with fast readers showing a greater advantage with higher orders of approximation. Significantly (.001) more erroneous words were given in higher orders of approximation in both groups. The errors increased with speed in adults but not with children. The types of errors and the interaction of type with order of approximation were significant for both groups. With higher orders of approximation there was an increase in grammatically acceptable and visually related errors accompanied by a decrease in proportion of random errors for children, but the main effect among adults was accounted for only at the higher levels of approximation. The results show that increases in reading speed are reflected by dealing with greater amounts of text at individual fixations. Both the words and typespaces perceived were increased. Detailed examination of types of errors and other comparisons led the investigator to suggest 3 methods by which faster reading may develop: 1) reduce fixations by missing chunks of text and inferring the rest; 2) reduce fixations by increasing the effective visual field by better use of context; and 3) possibly the reader may maintain rapid scanning, losing specific information, but securing thematic content, if not meaning.

Griffin, Walton, and Ives (183) compared the components of saccades, with reading and non-reading materials, between inadequate and adequate readers. The 13 inadequate male pupils scored 1-5 grades below their school placement on the *California Achievement Tests:* reading sections, while the matched group of adequate readers had a mean score of 8.4 on the reading section of the *Wide Range Achievement Tests* compared to a mean of 2.6 for the inadequate readers. The cards used with the camera were a Picture Card consisting of 25 black ink drawings of animals equally spaced across 5 rows; a Dot Card similar to the Picture Card with a 2 mm-dot substituted for the pictures; a Two-Word Card with three-letter words from the Dolch Lists including the 2 words per row spaced 84 mm apart; and a similar Five-Word Card from the same lists with the 5 words per row spaced 21 mm apart. In addition, a Reading Card, which ranged in difficulty from primer through junior high school level of difficulty was chosen to represent the maximum level at which each subject could read and included the 10 comprehension questions accompanying the card. Each film was analyzed to determine: total fixations per line, forward fixations per line, regressions per line, and duration per line. In addition, on the Reading Card, span of recognition, reading rate, and comprehension were analyzed. The F test for homogeneity of variance of 12 adequate and 13 inadequate readers was used, then the t-tests for pooled or for separate variance were obtained from the computer. The findings showed that on all cards the inadequate readers had a wider range in numbers of total fixations than did the adequate readers. Likewise, inadequate readers made significantly more regressions on the Dot Card (.03) and on the Five-Word Card (.008) but not on the others. Fewer forward fixations per line were made by inadequate than adequate readers on the Dot Card (.09), on the Picture (.13) and the Five-Word Card (.12). Inadequate readers tended to fixate longer on all cards but significantly (.09) longer on the Two-Word Card. On the reading cards, of maximal difficulty, no differences were found in comprehension between the groups; fixations per word were greater (.002), span of recognition was shorter (.009), and rate of reading was slower (.012) for inadequate readers.

IV-12 Other factors related to reading

Willows (544) examined the ability of poor readers to ignore irrelevant information in a reading task. From a total pretest sample of 272, a final sample of 104 good and poor readers was chosen. These subjects were defined by discrepancies between IQ scores on the culture free *IPAT* and the *Gates-MacGinitie Reading Tests*, poor readers being those whose reading achievement was 4 or more standard score points below predicted level. Subjects with hearing problems, vision problems, English as second language, or symptoms of brain or perceptual dysfunction were excluded from the study. Blocks of 4 subjects, 2 good and 2 poor readers, were then formed by matching for age and IQ. Each subject read a set of 8 stories from the *Gray Oral Reading Tests* in random order in one of 2 conditions: control or selective. The selective reading condition employed the same passages as the control condition, except that red words were typed between the lines of black print as a distraction to reading. Subjects were told to ignore the words in red. Each subject's reading performance was assessed on 5 dependent measures: 1) oral errors were scored according to the procedure outlined by the Gray manual, 2) reading time was measured for each story, 3) the time taken to respond to the comprehension measure was recorded, 4) nonintrusion or regular comprehension errors, and 5) intrusion errors.

Intrusion errors were those mistakes in comprehension that resulted from attention to words in red. Results of ANOVA's and trend analyses indicated that the selective reading condition required more reading time from poor readers, but not from good readers, and time required for responding to comprehension measures was greater for poor readers. Under the selective reading condition, good readers made substantially more intrusion errors than they did under the control condition. Poor readers, on the other hand, tended to choose the intrusion items less often under the selective than under the control reading condition. Correlation of intrusion errors and Gates-MacGinitie reading achievement scores indicated that the better the reader, the more intrusion errors he made. Finally, poor readers made more non-intrusion errors than good readers under both selective and control conditions. Results are discussed in terms of attentional behaviors and strategies of good and poor readers.

A report investigating the relationship between facets of perceptual-cognitive development at the kindergarten level and subsequent grade 1 reading achievement was published by Wallbrown, Wallbrown, Engin, and Blaha (526). Subjects were randomly selected from a stratified sampling of schools in one Midwestern city. The original sample consisted of 50 innercity, 20 transitional, and 50 outer-city kindergarten children. The final sample at the end of grade 1 consisted of 51 girls and 49 boys with a mean *Slosson Intelligence Test* IQ of 104.1. In addition to the Slosson, the following instruments were administered: *Wepman Auditory Discrimination Test;* an abbreviated version of the Bender Gestalt; the Auditory Sequential Memory and Visual Sequential Memory subtests of the *Illinois Test of Psycholinguistic Abilities* (ITPA); *Tapped Patterns; Horst Reversals Test; Language Comprehension; Word Recognition Tests I and II;* and the *Gates-MacGinitie Reading Test*, Primary A. The predictor battery of tests was administered to all subjects in the spring of the kindergarten year. The criterion reading test (Gates-MacGinitie) was given in June of the following year. A multiple regression analysis was used to analyze the data. The Slosson IQ was the best single predictor of Vocabulary subtest score on the reading test. The Tapped Patterns, Bender Gestalt, Word Recognition I, and Language Comprehension tests resulted in significant increments in the multiple correlation with the vocabulary score and explained about 49 per cent of the variance in the vocabulary criterion. The Bender-Gestalt, Slosson IQ, ITPA Visual Sequential Memory, Sex, and Horst Reversals gave a multiple coefficient of .615 with the comprehension criterion.

The authors concluded that general intelligence and visual-motor integration were important components of both vocabulary and comprehension skills at first grade level. Comprehension appeared to involve a broader range of visual skills than vocabulary. Vocabulary score was predicted with greater success than the comprehension score.

Smith and Pervanger (464) examined language skills, reading in particular, as requisite to academic success in a nursing education program. Over a 24-year period, scores on the *Ohio State Psychological Inventory* (including subtests of Vocabulary, Language Usage, and Reading) were studied relative to subjects in 4 categories: 1) Passing Graduates (PG), 2) Passing Non-Graduates (PNG), 3) Failing Non-Graduates (FNG), and 4) Failing Graduates (FG). Failure on the OSPI was designated to be a total percentile score below the 40th percentile. The PG group performed significantly ($p < .01$ or above) higher than the PNG group on all 3 subtests and the total test. The FG group did significantly ($p < .001$) better than the FNG group on all subtests and the total test except Language Usage. Reading subtest scores were considered to be the best predictor of success in the nursing program. When all subjects were combined into 2 groups of graduates or non-graduates, all graduates were significantly higher ($p < .001$) on all part scores. Subtest scores were correlated with each other and with total test scores for the original 4 groups. All correlations were significant ($p < .01$) except for the 3 subtest intercorrelations for the FG group.

Satz and Friel (432) report additional findings based on a second year followup of children, at end of grade 1, given an extensive developmental and neuropsychological test battery. Underlying the study is a theory of developmental dyslexia which is postulated to reflect a lag in maturation of the brain, and therefore, delaying differentially those skills which are in primary ascendancy at different ages. On a practical level, the study was designed to yield an early and valid "warning system" to detect those children who would likely encounter difficulty in learning to read *before* formal reading instruction is initiated. Subjects in the study were from both urban and rural schools in Flordia, largely white males, had a mean age of 66.3 months and an age range of 57 to 78 months, were tested individually, and were characterized by an incidence of 11.5 per cent considered to be of low SES. The test battery consisted of 22 predictor variables described elsewhere. Criterion measures of reading consisted of a 10-item reading level scale used by the teacher for each child at end of grade 1. Placement on the reading scale defined the subjects as either High or Low Risk, and further placed subjects within subcategories in these 2 groups. A total of 17 predictor variables significantly ($p < .005$) differentiated the High from the Low Risk subjects. Four predictor variables accounted for 82 per cent of the correct predictions: 1) Finger Localization, 2) Recognition-Discrimination Test, 3) Day of Testing, and 4) Alphabet Recitation. These variables loaded on Factor I, which was defined as a general measure of sensory-perceptual-motor-mnemonic ability epitomized by the test of Finger Localization. All of the severely disabled readers in the High Risk group and 95.1 per cent of the superior readers in the Low Risk group were validly detected. The authors include data and discussion that illustrate prediction decisions that were made in the study, as well as discussion of the practical significance of an early reading disability detection system.

Rubeck (417) explored the role of the Hawthorne effect for its contribtuion to differential performance on standardized tests of reading. Children across grades 3 through 8 from 24 classrooms were involved in the study. Within the context of a factoral design, 2 major experimental conditions with corresponding control groups were investigated: pseudo-experimental manipulation and time limits during the test administration. Two forms of the *Nelson Reading Test* were used as measures of reading in a pretest and post test situation Pseudo-experimental manipulations consisted of telling subjects they were involved in an experiment and 3 activities conducted with subjects that were not related to reading. Additionally, subjects operated under time limits or no time limits during test administration. Analysis of covariance indicated no significant effect for either pseudo-experimental manipulation or presence or absence of time limits. Further, there was no interaction between the effects of pseudo-experimental manipulation and test time limits.

In a 2-part study, Nelson and Warrington (351) attempted to assess the relationship between intellectual ability and spelling retardation, and to analyze spelling errors of children who had discrepancies between Verbal and Performance IQ. In experiment 1, subjects were selected who had at least a Verbal and Performance IQ of 85, were retarded at least 2 years in reading and / or spelling, and who had no known physical or emotional problems. Reading and Spelling levels were measured with the *Schonell Graded Word Tests.* The subjects were then divided into 2 subgroups: subjects with general verbal retardation (WISC Verbal IQ 15 or more points below Performance IQ), and subjects with little or no general verbal retardation (WISC Verbal IQ less than 15 points below Peformance IQ). Chi-square analyses indicated that the children with little or no Verbal IQ deficit were as retarded in spelling, but less retarded in reading than children with large Verbal IQ deficits. Of the original 121 subjects, 65 were identified for analysis of spelling errors on the basis of at least 10 "scoreable" errors and a spelling level of at least 5 years 9 months (to reduce the number of those subjects who made random spelling responses). The sample was subdivided into Spelling-Only Retardates (SOR) and Spelling and Reading Retardates (SRR). Addition of data from another study brought the sample to 71. Spelling errors (10 per child) were classified as extraneous letter errors (E), omission errors (Om), order errors (Or), vowel substitutions (V), consonant substitutions (C), and reduplications (R). Analysis of WISC subtest scores for the 2 groups indicated that the SRR group was significantly lower in Verbal IQ and lowest on the Vocabulary subtest. The SRR group had made more errors of the E, Om, and Or types, while they had fewer V, C, and R errors than the SOR group. The greatest discrepancies were on E and Om errors in favor of the SOR group, and on V and C errors in favor of the SRR group. By combining error types, it was discovered that the SRR group made significantly ($p < .05$) more phonetically inaccurate errors and the SOR group made significantly ($p < .02$) more phonetically accurate errors.

A study conducted by Kennedy and Halinski (259) concerned itself with the development and validation of a scale to assess attitude toward reading in high school students. In the first phase of the study, high school subjects were asked to respond in writing to a number of open ended questions concerning reading. These responses were subsequently used in the development of a 90-item inventory that was administered to nearly 500 high school students who reacted to the items by responding strongly agree, agree, disagree, or strongly disagree. On the basis of a factor analysis of these data, the inventory was revised to contain 70 items. In the last phase of the study, the revised scale was administered to students in English classes, 422 of whom signed their names and 555 of whom responded anonymously. All students indicated their sex, last letter grade in an English course, grade level, and academic track. Teachers of subjects who signed the inventory were asked to indicate those 3 subjects with the most positive and the 3 with the least positive attitude toward reading. Total and subgroup reliabilities of the inventory were computed; none fell below .91. As hypothesized, subjects identified by teachers as having the most positive attitude toward reading scored significantly higher, females scored significantly higher, "A" subjects were significantly higher than "B" subjects, "B" subjects were higher than the remainder, and accelerated subjects were significantly higher than regular track subjects (all at $p < .001$ level). No differences were found between signed and anonymous groups. Additionally, 14 items were included in the scale that would identify subjects who exaggerated in their responses; *e.g.*, "I would rather read than do anything else." There was a general tendency for subjects to disagree wtih these items.

Jantz (234) assessed various factors as they related to reading level and gains in reading achievement between fifth and sixth grade. Information was collected on subjects concerning sex, race, IQ, SES (assessed by occupational ranking), and fifth and sixth grade reading scores. Unvariate and multivariate ANOVAs, ANCOVAs, and regression techniques within a 2 × 2 × 2 × 4 factorial design were utilized. Results indicated significant ($p < .01$) differences in terms of reading favoring females, white pupils, high SES pupils, and high IQ pupils. Analysis of reading gain scores between fifth and sixth grades indicated the same general trend; however, these differences did not reach significance. Results are discussed in light of educational goals and testing practices used to set educational goals.

Jackson and Ayrer (233) examined longitudinal achievement data of subjects possessing the sickle cell trait. A total of 1,806 subjects from a junior high school in Philadelphia were tested by electrophoretic analysis for presence of sickle cell hemoglobin. Of these, 383 subjects were found to have sickle cell anemia and other blood deviations; 354 subjects were eliminated from study, leaving 29 ninth and tenth graders who possessed the sickle cell trait. An additional 29 subjects were chosen randomly from the remaining 1,423 subjects to serve as the control group. All subjects in the study were black, and their socioeconomic status was judged lower or lower middleclass. Reading Comprehension, Total Arithmetic, and Composite scores from the *Iowa Tests of Basic Skills* for each student for the years 1968 through 1971 were used as dependent variables. Data analyses were conducted using a 2-way ANOVA with repeated measures; 6 analyses were run involving the 3-part scores previously named at both the eighth and ninth grade level. No significant differences were discovered between the experimental and control groups, indicating that the sickle cell trait does not affect scholastic achievement.

Denney (105) investigated the relationship between reading ability and a variety of measures of cognitive style in poor and average readers. Ten poor and 10 normal readers from each grade level 2 through 5 were identified by teachers. All 80 subjects were tested for reading ability with the following measures: 1) oral reading proficiency, comprehension, and reading rate with the *Gilmore Oral Reading Test;* 2) word pronounciation, recognizing and blending common word parts, recognizing visual forms or word equivalents of sounds, and auditory blending with subtests from the *Gates-McKillop Reading Diagnostic Tests.* Cognitive style measures consisted of: 1) the *Conceptual Styles Test* (CST), providing a measure of preferences for analytic, relational, and inferential concepts; 2) the *Matching Familiar Figures Test* (MFFT) to assess the cognitive tempos of reflection and impulsivity; and 3) the *Fruit Distraction Test* (FDT) which measures constricted and flexible attentional styles by having children respond to pictures interspersed with irrelevant stimuli. Finally, the *Peabody Picture Vocabulary Test* was administered so that IQ could be controlled and partialled out using a 4 × 2 ANCOVA. Results of analyses of reading data indicated that good readers significantly ($p < .001$) outperformed poor readers on all reading measures. Pairwise comparisons of the Grade × Reading interactions at each grade level demonstrated that differences between the 2 groups in terms of accuracy and rate were most prevalent at grades 4 and 5. No significant differences were found for reading level or Grade × Reading Level Interaction on the CST. However, at grade 5 poor readers gave significantly fewer analytic responses ($p < .05$) and more relational responses than good readers. No significant differences were disclosed regarding MFFT scores. Although significant differences were found on the FDT, no consistent trends in the degree of disparity between good and poor readers was evidenced across the 4 grade levels. Partial correlations were computed between cognitive style measures and reading; only selected measures within the FDT showed substantial correlation with reading ability.

Frith (157) attempted to study some effects of internal schemata for the orientation of letters. In the first of 2 experiments, 20 children and 20 adults, all of average ability, were used. In the second experiment, 18 seven year olds, 24 seven-and-a-half year olds, and 14 twelve year olds served as subjects. Half of the children in the second experiment were good readers and half were poor readers. Reading ability was assessed by subjects' teachers. Schonell Reading Ages were available for the oldest group, in which poor readers had a retardation of at least 2 years. Subjects received 10 upper case letters in 4 conditions. Two conditions showed letters in their normal form and 2 in reversed form. Subjects had to copy the letters in one of each condition and to reverse them in one of each condition. In Experiment 1 a set of letterlike symbols was also used in the 4 conditions. Subjects in both experiments were asked to transfer to their non-preferred hand after 10-15 minutes and to copy both a row of normal and reversed letters. In the first experiment, time comparisons only were made, and it was found that adults were faster than children, copying was faster than reversing, letters were faster than letter-like shapes, and normal writing was faster than reversed writing. In Experiment 2, older children were found to be faster and copying was faster than reversing. No overall effect was found for reading ability. At age 7, poor readers made familiar writing movements more slowly than good readers and unfamiliar movements, less slowly. The opposite was found for 12 year olds. The author developed an outline of the role of schemata in reading based on her findings. Comparisons of performance with the preferred and non-preferred hand in both studies showed that writing with the non-preferred hand was generally slower. Reading ability had no effect on performance.

The influence of birth order on educational aspiration and on verbal intelligence was studied by Glass, Neulinger, and Brim (171). A stratified random sample of grades 10 and 12 public school students totalling 5,321 was drawn. From this population, 2,523 white male and female students from 1-, 2-, or 3-child families were used. Education aspiration was assessed by an item on a survey questionnaire asking for expected amount of education. Verbal intelligence was assessed by a reading comprehension test developed by Project Talent. Birth order effects were found only for students coming from higher socioeconomic backgrounds. Only and first-born children of fathers who had graduated from high school scored significantly higher on the reading test than did other children. They were also significantly higher with respect to educational aspirations. No reliable effects were found within students whose fathers did not graduate from high school. A second analysis tested for differences among the 4 birth order groups—only, first born, second born, and third born. Again, no significant differences were found for students whose fathers were from the low education group. Among the students of higher education fathers, differences in reading test scores were noted between third-born subjects and the other categories. Even with family size controlled, third-born children scored lower than did the others.

Johns (241) attempted to determine the relationship between children's concepts of reading and their reading achievement. From a sample of 53 fourth and 50 fifth graders, 36 children were classified as good readers and 29 were classified as poor readers. Good and poor readers were defined as achieving a grade equivalent score of a year or more above and a year or more below their grade placement respectively on the Comprehension subtest of the *Gates-MacGinitie Reading Test*. All children were asked, "What is reading?" in individual interviews. Their responses were tape recorded and later categorized as "meaningful" or "non-meaningful." Using chi square, it was found that significantly more good than poor readers gave meaningful responses. At the same time, over half of the good readers gave non-meaningful responses.

Schill, Evans, Monroe, and Drain (433) investigated the "banned in Boston" effect, hypothesizing that censure would enhance reading an erotic magazine for low—but not high-guilt subjects. Using a cutting score of -21 on Mosher's Forced-Choice Sex Guilt Scale, 24 high- and 24 low-guilt subjects were exposed to positive, negative, or neutral comments about the erotic magazines in the experimenter's office made by a confederate to the experiment or in the subject's presence. The subject then remained alone in the experimenter's office for 5 minutes, during which time he was observed through a one-way mirror and the amount of time he spent viewing erotic and sexually neutral magazines was recorded. Using analysis of variance, it was found that high-guilt subjects viewed the erotic magazines significantly longer after both types of evaluative comments than after neutral comments. Low-guilt subjects viewed the erotic material significantly longer after negative than after positive comments, but neither condition differed significantly from the neutral condition.

The aim of the study by Black and Bargar (36) was to investigate the relationship between pupil mobility and reading achievement at grade 6. Movement history (types of schools attended), movement pattern (number of times enrolled in each school attended), and time of movement (grade level during which move took place) were sources of data. Mobile pupils (N = 73) were identified as those having a record of 2 or more school transfers; the 135 stationary pupils had less than 2 school transfers. Intelligence, as assessed by the *California Short-Form Test of Mental Maturity*, Level 2H, was held constant and relationships among mobility, sex, and reading achievement were analyzed. The *California Comprehensive Reading Test*, Level 2, and a pupil personal data collection form were used. No significant differences in reading achievement were found between mobile and stationary pupils on any of the 3 mobility factors studied. No significant interaction was found between mobility and sex.

IV-13 Factors related to reading disability

Vellutino, Steger, Kaman, and DeSetto (515) viewed the visual form perception of poor and normal readers at grades 2 and 6. Three groups of 6 boys and 5 girls each were formed at each grade level: one group of poor and one of normal readers unfamiliar with Hebrew and a group of normal readers who were learning to speak, read, and write Hebrew. Subjects were screened by means of checklists filled out by appropriate school personnel for gross physical and neurological disorder, auditory and uncorrected visual acuity problems, severe emotional difficulties, and frequent absences from school. Only children with either a Verbal or Performance IQ of 90 or above on the WISC were included. At grade 2, the criterion for selecting poor readers was a score on the *Gilmore Oral Reading Test* of one or more years below grade level; at grade 6, a score of 2 or more years below grade level was used. Normal readers had grade equivalent scores at or above grade placement. Subjects were also given a 35-item test of decoding ability using nonsense syllables. Nine Hebrew words, consisting of an equal number of 3-, 4-, and 5-letter sets, were used as stimuli, which pupils were asked to reproduce. The performance of both non-Hebrew reading groups was comparable to one another but inferior to that of children in the Hebrew reading group. The authors contend that the data offer additional support for their thesis that reading disability is not attributable to organic dysfunction in visual-spatial processing.

Wissink, Kass, and Ferrell (549) suggested a Bayesian approach to the identification of children who might be classified as learning disabled (LD). This approach assumes a set of common characteristics among LD children and requires probability estimates for these characterisitics. The steps of the approach call for 1) a prior odds ratio estimate that would assess the frequency of LD in the general population, 2) a posterior odds ratio estimating a new frequency rate based on knowledge of component disability, and 3) a likelihood ratio based on the frequency of LD among those children who exhibit particular component disabilities. The authors of the present study reviewed the literature and listed over 110 LD symptoms; they then reduced this list to 40 by eliminating overlap. These

40 component disabilities fell under the 5 general processes of Integration, Memory, Reception, Expression, and Sensory Orientation. A questionnaire was then constructed and sent to more than 100 specialists in LD; the specialists were given the 40 component disabilities and asked to estimate their frequency in both LD and non-LD children, and to estimate the relatedness of all pairs of 40 components. A total of 40 specialists responded. The median estimate of the proportion of LD children to normals was .05. A rank ordering of the components according to *diagnosticity* indicated that the 5 most diagnostic individual components were found to be Reading Comprehension, Attention, Auditory-Visual Coordination, Writing, and Auditory Speed of Perception (the 5 processes above are ranked in terms of diagnosticity in the order stated). Thus, it was calculated that a child having these 5 disabilities would have a posterior probability of .98 of having LD. Only 26 specialists responded to pairwise relatedness estimates of the 40 components, and only 16 of 760 possible relationships were specified by more than half of these 26. For the most part, components like Listening Comprehension and Auditory Discrimination were considered related. The authors discuss the practical application of the Bayesian approach to LD screening.

Wilson and Spangler (547) examined the usefulness of the *Peabody Individual Achievement Test* (PIAT) as a quick and reliable screening instrument for academic progress with learning clinic referrals. The 83 children in the study had a mean age of 9.06 and a mean IQ of 87.75; the IQ measure consisted of either the WISC, the *Stanford-Binet Intelligence Scale*, or the *Peabody Picture Vocabulary Test*, depending upon clinical judgment and age of subject. Each subject was administered the PIAT, (subtests of the PIAT included math, reading recognition, reading comprehension, spelling, and general information), as well as tests of neurological, audiological, ophthalmological, and physical deficits. No subjects exhibiting severe mental retardation, sensory deficits, or gross motor impairments were included in the sample. Pearson product-moment correlations were computed between PIAT total test score and the 3 IQ measures, partialling out age as a confounding variable. The WISC and the PPVT correlated significantly ($p < .01$) with the PIAT, while the *Stanford-Binet* correlation was somewhat lower ($p < .05$). The authors further discuss problems associated with correlational studies and report reliability coefficients for the subtests of the PIAT.

Beatty (26) conducted a factor analysis of a learning disabilities screening instrument used with first, second, and third graders. The instrument was given to teachers who then completed it for each of the children in the study who had been identified as learning disabled. A principal axes factor solution that employed an iterative procedure for establishing communality estimates was used; reliabilities were also computed for items comprising each of the 10 factors subsequently identified. The original 80-item scale was reduced to 48 items measuring 10 factors. The final instrument contained 9 items measuring the factor Reading Disability. Reading Disability items loaded on factors of Speech / Auditory Disability, Conceptualization Incompetencies, and Neurological Disability. The reliability estimate for the Reading Disability factor was .77. The author discusses the utility of the instrument in the early identification of children with learning disabilities.

Hoiberg, Hysham, and Berry (217) studied rate of and reasons for military discharges of illiterates and literates. Data were collected on naval recruits assigned to a remedial training program between 1967 and 1972; those 1,518 subjects who failed a third-week academic test (corroborated by scores from the *Gates-MacGinitie Reading Test*) comprised the experimental sample. A control sample of 1,520 recruits from the same companies who were matched to the experimental sample on the basis of scores on the *Armed Forces Qualification Test* was chosen. Of the illiterate sample, 273 (17.98 per cent) were discharged during their first year of active duty, while only 26 controls (1.71 per cent) were discharged during their first year. In the illiterate group, inaptitude and behavior disorders accounted for the majority of the discharges. The comparisons of the 2 groups indicated that the enlistee who needs academic remedial training is a 4 times greater neuropsychiatric risk to the Navy than is the literate.

Klasen (265) studied a total of 488 children, aged 6 to 19, who had been identified as dyslexics in order to clarify the symptomology of the dyslexic syndrome. Two general criteria were used in the selection of subjects; subjects with general learning and behavior problems were excluded, while those participating in the study exhibited definite disparities between intellectual potential and achievement in language related areas. The following measures were utilized with the total or portions of the total sample: 1) WISC, 2) *Goodenough Draw-A-Man Test*, 3) *Koch's Tree Test*, 4) *Bender Visuo-Motor Gestalt Test*, 5) *Frostig Developmental Test of Visual Perception*, 6) *Peabody Picture Vocabulary Test*, 7) *Huelsman Word Discrimination Test*, 8) *Wide Range Achievement Test*, 9) *Harris*

Test of Cerebral Dominance, 10) *Wepman Auditory Discrimination Test*, 11) *Keystone Visual Survey Test*, 12) *Developmental Reading Test*, 13) *Durrell-Sullivan Reading Achievement Test*, 14) *Iowa Silent Reading Test*, and 15) various projective tests such as the *Thematic Apperception Test*. Some of the major findings included: 22.4 per cent of the subjects in the sample had speech impediments; 39.6 per cent (based on a subsample of 414) had not begun to speak by age 18 months; 44 per cent exhibited crossed or incomplete laterality; ambiguous laterality was significantly less frequent in older children; 28.6 per cent had specific visual perception problems; 38.6 per cent had combined difficulties in visual perception and motor function; 49.2 per cent displayed motor dysfunction; 10.2 per cent had auditory perceptual problems, 32 per cent had impaired vision, 9.2 per cent had hearing losses; and 26.8 per cent were judged to be hyperactive. A number of additional personality correlates such as immaturity, frustration, intolerance, aggressiveness, and defensiveness were assessed and related to reading and language deficits.

Fuller and Friedrich (162) examined subtypes of reading disability in an effort to discover differences among subtypes on a variety of psychological measures. On the basis of an analysis of rotation, distortion, and separation errors on the *Minnesota Percepto-Diagnostic Test*, 172 fourth graders were assigned to one of 3 groups according to Rabinovitch's classification scheme: Primary, Secondary, or Organic. The following tests were then administered to all subjects: 1) WISC, 2) ITPA, 3) *Hawthorn Concepts Symbolization Test*, 4) *Wide Range Achievement Test* (WRAT), and 5) *Durrell Analysis of Reading Difficulty*. Results for the Primary group indicated no visual-motor problems, a general verbal deficiency with a large discrepancy between Verbal and Performance IQ's, generally good psycholinguistic performance with some weaknesses on ITPA subtests involving the auditory channel, average ability on the Hawthorn, and low scores in both listening and silent reading comprehension accompanied by high scores on word recognition tasks. The Secondary group exhibited association and memory problems relative to visual-motor abilities, no discrepancy between Verbal and Performance IQ's (both in average range), average or near average performance in terms of psycholinguistic ability and conceptual (Hawthorn) ability, and low scores on the WRAT. Secondary group subjects were better than Primary subjects on all subtests of the Durrell, with their highest scores on listening and word recognition tasks, and lowest scores on silent and oral reading. Organic subjects indicated associative and motor problems and input difficulties relative to visual-motor ability low average (with little discrepancy) Verbal and Performance IQ's, general low performance on the subtests of the ITPA, and low performance on the Hawthorn (with very low scores on Laterality). Organic subjects also had the lowest WRAT scores of all subjects, poor silent and oral reading scores, and demonstrated their best performance on word recognition tasks. The authors relate their findings to data from similar research studies.

Barganz (17) investigated whether good and poor fifth grade readers utilized a system of semantic correspondence when encountering irrelevant phonetic aspects orthography. Both oral and visual methods of presentation and mode of response were investigated in the 4 types of tasks presented: oral/oral, oral/visual, visual/oral, and visual/visual. In the oral/oral task, the root word of a target word was verbalized within a spoken sentence context by the experimenter. A second sentence containing a derived form of the root word was then read aloud and 4 pronunciation choices given. The oral/visual task assessed ability to relate a changed phonetic form to orthographic representation. The root form was verbalized within context by the examiner. Subjects then selected from one of 4 orthographic representations of a derived form as used in a spoken context by the examiner. The visual/oral task assessed ability to ascribe the correct changed phonetic form auditorily from a stimulus presented in conventional orthography. A target word presented in orthographic form within a spoken context; response items were presented as in the oral/oral task. The visual/visual task assessed the ability to recognize a derivational relationship by cues provided by the orthography. Target words were presented in conventional orthography within a spoken sentence. A second sentence using a derived form was then read aloud by the experimenter and subjects were to select the correct orthographic respresentation from 4 choices. In addition to real words, pseudo-words were also used in the 4 tasks. Subjects were operationally defined as good or poor readers by scores on the *Stanford Achievement Test*, Intermediate II. A 2 × 2 × 4 factorial design was used to investigate the effects of reading ability, word reality (real and pseudo), and modality of stimulus and response. Good readers performed significantly better than poor readers on all tasks. Performance on real words was significantly better than on pseudowords on all except the visual/visual task. Findings suggested that conventional orthographic representation is a facilitative effect to the development of semantic relationships. The author felt his findings suggested that good readers were more competent in recognizing the underlying forms of words and have developed a strategy of attending to lexical identification rather than of focusing upon surface structure.

In 2 experiments by Clifton-Everest (78), 15 normal readers and 15 backward readers were compared on an immediate memory task. Backward readers had reading ages at least 18 months below their CA. Subjects were matched for CA and for IQ on the *Raven's Progressive Matrices*. In both experiments, subjects were asked to recognize meaningless line patterns which were presented for a time either greater or less than the length of a single fixation. The patterns required visual storing, and they could not be coded into a verbal form. No support was found to indicate that the recognition performance of backward readers is poorer than that of normals.

Preston, Guthrie, and Childs (382) compared the visual evoked responses (VERs) of disabled readers with 2 control groups of normal readers. The 9 disabled readers had a mean CA of 9.9, a *Peabody Picture Vocabulary Test* mean IQ of 103, and a mean reading level of 2.3 on the *Gates-MacGinitie Reading Test*. One control group was matched with the disabled group on CA and IQ, and the other was matched on IQ and reading level. Electrodes were attached to subjects at the vertex, left and right parietal, and left and right occipital regions as well as to the left mastoid and on the forehead. Children were presented with 4 types of visual stimuli: 50-millisecond (msec.) light flash, 300-msec. light flash, 50-msec. exposure to the word *cat*, and 300-msec. exposure to the word *cat*. Eight runs were made with 2 presentations each of the 4 types of stimuli with 50 stimuli presented for each run. Poor readers showed significantly lower amplitude than the normal old group or the normal young group. The authors posit support for a neurological deficiency as the origin of a reading disability.

A comparison of the decision-making process in reading-problem families (RP) and in normal families was undertaken by Peck and Stackhouse (373). RP families consisted of Father-Mother-Son triads that had been together for at least 2 uninterrupted years. Their names were obtained from professional personnel in school systems. Sons were between 9 and 13 years old and scored within the normal range of intelligence on school data. Names of normal families were randomly drawn from church and school directories. No differences were found between the 2 groups with respect to parents' age and educational level, family size, and father's occupational level. Individual family triad members privately filled out the 38-item Opinion Questionnaire. They were then brought together to arrive at a mutually satisfying decision on each of 20 selected items on which they had disagreed. The session was taped and decision time and silent time recorded. In addition the level of spontaneous agreement in the Mother-Father dyad as well as the triad was determined for the questionnaires. The 2 groups exhibited the same level of spontaneous agreement. The RP families took longer to complete the decision-making, spent more time in silence, and showed fewer exchanges of explicit information and more irrelevant transactions. The authors indicate that RP families tend to have a closed communication atmosphere and have taught the child how not to learn.

The *Canadian Test of Cognitive Abilities*, the *Frostig Developmental Test of Visual Perception*, and the *Spatial Conservation Test* were administered to 20 grade 2 pupils in the study reported by Kershner (260). On the basis of the median Frostig score and median conservation error score, pupils were divided into low and high groups in perceptual and cognitive, spatial organization, respectively. Subjects were then given the *Gates-MacGinitie Test* of reading comprehension and comparisons made for low and high perceptual and cognitive perceivers. Groups did not differ significantly on IQ scores. Comparisons between high and low perceptual groups revealed no differences in reading comprehension scores. High performance on the cognitive-spatial task was related to high performance on the reading test. Further analyses revealed that, irrespective of perceptual ability, high cognitive-spatial scorers did better on the reading test than did poor cognitive spatial scorers.

A test of a model attributing poor recall to slow speech-motor encoding was presented by Spring and Capps (475). Speech-motor encoding speed was assessed by requiring subjects to name digits, color patches, and pictures as rapidly as possible. Memory was assessed by a probe-recall task in which subjects were shown a series of cards containing digits. The cards were first exposed and then placed face down. The subject was to point to the face down card matching a probe digit subsequently exposed to him. Subjects were 24 dyslexic boys scoring an average of 2.3 years below expected grade level on the reading section of the *Wide Range Achievement Test*, 2.3 years below grade level in spelling, and 1.9 years below in arithmetic. The mean full scale IQ was 102. A second group of 24 boys was selected whose reading abilities were close to expected grade levels as assessed by one of 3 tests. Groups were matched for CA and approximately matched on father's occupation. On the naming tasks, no significant differences were found in numbers of errors made. However, dyslexics were slower than normals, younger children were slower than older, and performance on colors and pictures was slower than on digits. There was a larger difference between the 2 groups on digit naming speed than on speed of naming colors and pictures. For the memory test, eye movements were observed and subjects classified as scanners or non-scanners. A significantly greater number of dyslexics were non-scanners. The performance of dyslexics (scanners and non-scanners) tended to be poorer than that of normals on the memory task in all but the most recent 2 positions, indicating a difference in long-term storage. Speed of naming colors and pictures discriminated between dyslexic scanners and non-scanners.

The role of special pediatric evaluation in identifying learning disabled (LD) children was studied by Keele, Keele, Huizinga, Bray, Estes, and Holland (255). In the first of 2 studies, 60 pupils, both LD and non-LD were randomly selected from 600 grade 3 pupils who had been screened with *The Pupil Rating Scale*, a coding test, a syllabication test, and the Bender-Gestalt. The 41 boys and 19 girls were given a special pediatric and psychological examination including the following: 1) complete medical history, 2) physical examination including a routine neurological examination, 3) examination for minor neurological dysfunction, 4) evaluation of pupil's drawing of 2-dimensional figures, 5) word recognition test (unidentified), and 6) evaluation of a parent-teacher questionnaire as to their opinion of the presence of motor hyperactivity and/or a learning disorder. Following the evaluation, the 2 pediatricians involved recorded their opinion as to whether or not the child was LD. In addition children were given the WISC, the *Illinois Test of Psycholinguistic Abilities* (Revised Edition), and the *California Achievement Test*, Upper Primary. Previous tests and school data were also reviewed. A team conference including the pediatrician, psychologist, and a specialist in learning disabilities was held. In Study 2, 29 pupils referred by a school district, were given the same special pediatric evaluation. These pupils were considered by their teachers, the examining psychologist, and an educator to be children with severe learning disabilities. In Study 1, the pediatricians were in agreement with the team in 91 per cent of the LD children and in 70 per cent of the non-LD children. a significantly higher proportion of LD children as opposed to non-LD children showed the following: significant high risk conditions for central nervous system dysfunction, obesity, teacher and parents reporting a learning disability, poorly drawn 2-dimensional figures, and delayed word recognition. There were no significant differences in the pediatric findings reported between the LD children in the 2 studies. The authors feel that their findings point to the need for a medical evaluation in LD children.

In a further analysis of earlier findings, Rutter, Yule, Quinton, Rowlands, Yule, and Berger (425) investigated possible reasons for the differences in rates of emotional and conduct disorders and in specific reading retardation between Isle of Wight (IOW) and inner London borough (ILB) 10 year olds. A 2-stage strategy was followed. In the first stage, factors associated with problems within each group were identified; in the second stage, differences between the 2 groups with respect to the factors were determined. In each area, a control group was studied for comparison purposes. Data on family and social characteristics were obtained by means of a non-schedule standardized interview with parents. Feelings and attitudes were also assessed in the interview by taking into account the way in which things were said, such as differences in speed, pitch, and intensity of speech and facial expression and gesture. Interviews lasted from 2 to 3 hours and were conducted by trained personnel. Interviews were held with the mother in the majority of cases, with the father being seen for a briefer period of time. Both parents completed a malaise inventory. Four groups of variables were considered: family disturbance, parental deviance, social circumstances, and school characteristics. Among the various findings noted were the following: large family size was significantly associated with specific reading retardation; there was a tendency for reading retardation to be less common in the families of non-manual workers holding clerical, managerial, or professional jobs; none of the measures of family disturbance was associated with specific reading retardation. School characteristics associated with reading retardation tended to be greater teacher and pupil turnover, a higher rate of absenteeism and a higher proportion of children with immigrant parents. In most cases, the adverse factors were more commonly found in the ILB group than in the IOW group.

In Britain, Berger, Yule, and Rutter (31) compared rates of specific reading retardation and general reading backwardness of children in a large metropolitan area (London) and in an area of small towns (Isle of Wight). Data used were obtained from a 1964 survey for the Isle of Wight (IOW) group and from a 1970 survey for the London group. Children were diagnosed as having specific reading retardation or general reading backwardness on the basis of individual psychological testing following group testing. The individual tests used were the short form of the WISC and the *Neale Analysis of Reading Ability*. In the IOW group, 98.8 per cent of the children were tested on the NFER Test NV_5 for non-verbal intelligence and the *Watts-Vernon Test* SR_1 for reading. For the London group, 99.5 per cent of the children were tested on the same intelligence test and on the NFER Test SRA for reading. Comparability between the 2 reading tests was determined on another group of children and adjustments made to provide for the differences. The London group scored below the national average on both the intelligence and reading tests, whereas the IOW group was slightly above the national norms on the comparable tests. The prevalence of specific reading retardation, defined as a severe degree of underachievement, was determined to be almost 3 times as high in the inner London group as in the IOW group. Severe reading backwardness was defined as a level of attainment on either the Accuracy or Comprehension of Reading subtests on the Neale which was 28 months or more below CA. In the London group, approximately one child in 5 was reading below 7.8 level. The general reading backwardness in the London sample was about 19 per cent as compared to 8.3 per cent in the IOW group.

Wark and Walch (527) compared heart rate of test-anxious versus test-cool subjects at rest and while reading to answer questions. From 15 students in the Psychology Department Subject Pool who took the *Mandler-Sarason Test Anxiety Questionnaire*, 3 were categorized as test-cool. From the 12 test-anxious, the 3 lowest scorers who also expressed a desire for help in overcoming test anxiety were selected. Using a cardiotachometer and finger pulse sensor to monitor heart rate, it was found that resting heart rate was approximately the same in both groups. In the cool group, reading heart rate was approximately the same as resting heart rate. In the anxious group, reading heart rate showed a marked increase over resting heart rate. However, graphing mean heart rates for each of the 8 tests read revealed a differential pattern. On the first 2 tests, both groups showed a heart rate increase from resting to reading. From test 3 on, the differences in the cool group were minimal; but in the anxious group, they remained large.

IV-14 Personality, self concept, and reading

Ingersoll and Johnson (231) sought to clarify the relationship among personality traits, reading comprehension, and different measures of comprehension. Third grade subjects, 2-thirds of whom were white and one-third black, were administered a variety of tests. Each subject was given cognitive measures including the *California Test of Mental Maturity* (in order to partial out the effects of verbal ability), the *Comprehensive Test of Basic Skills*, the *Reading Progress Scale* (using a cloze format with alternatives provided), and 3 informal cloze measures at each of the first 3 grade levels, using an every fifth word deletion pattern. Two trait predisposition or aptitude measures were utilized. These included an assessment of locus of control with the *Ohio Student Index* and Sarason's measures of test anxiety and general anxiety. All scores were analyzed as standard scores via a stepwise multiple regression. Generally, all comprehension measures correlated significantly ($p < .01$) both with measures of locus of control and test anxiety. Specifically, subjects with an external locus of control fared better on cloze type tests than on traditional multiple choice tests. Conversely, subjects with an internal locus of control did better with multiple choice tests. Under all conditions, low test anxious learners performed better than high test anxious learners. The authors call for additional investigation of the interactive effects between reading comprehension and personalogical variables.

Simon and Simon (457) explored the relationship among self esteem, school achievement, and intelligence in a population of subjects aged 10 to 12 from a New York City suburb. Measures included Coopersmith's *Self-Esteem Inventory* (SEI), the *Lorge-Thorndike Intelligence Test*, and the *SRA Achievement Series* (consisting of 5 subtests including reading). The SEI was comprised of 50 items; for each item or descriptive statement, subjects were to respond "like me" or "unlike me." The composite group percentile on the SRA was found to be 65.78; group verbal IQ was 112.25; and group nonverbal IQ was 113.85. Pearson product-moment correlations were computed among the measures. The correlation between the SEI and SRA scores was .333 ($p < .01$), correlations being nearly identical for boys and girls. The correlation between the SEI and verbal IQ and non-verbal IQ was .299 and .232 respectively ($p < .01$ and .05). The largest discrepancy between boys and girls appeared in the latter correlation. Correlations for individual subtests from the SRA were not reported.

Black (35) studied the relationship between self concept and learning disability, specifically looking at reading achievement and its ability to differentiate among children with learning problems. A total group of 50 elementary subjects with a mean age of just over 11 years served as the sample; all subjects had been referred for clinical evaluation by the public schools. The sample was divided into 2 groups. Group 1 was considered normal readers with at or above grade level scores on Reading and Spelling subtests of the *Wide Range Achievement Test*, while Group 2 was designated retarded readers with a minimum 0.5 retardation level on the same measures. All subjects were further given the WISC (group 1 and 2 Full Scale IQ's were 103 and 99 respectively) and the *Piers-Harris Children's Self Concept Test*. Differences in mean achievement for the 2 samples were significant ($p < .01$). Mean percentile score on the measure of self concept for group 1 was 59.2, and for group 2 was 44.2 (significant at .05 level). Additionally, correlations were computed between subject variables and the self concept measure. Correlations between self concept and WRAT subtests of Reading, Spelling, and Arithmetic were negative and significant ($p < .01$) for both groups. High negative correlations (significant at .01 level) were also revealed for age and grade level of subjects; this relationship was more pronounced for retarded readers than for normals. The author discusses the results of the study in regard to current school practices involving learning disabled children.

The purpose of the research by White and Simmons (535) was to examine the relationships of pupils' self concept and the teacher's perception of academic, social, and emotional maturity, and the children's *Metropolitan Readiness Test* (MRT) scores. Subjects came from the 8 first grade classrooms in one school system. Teachers filled in the 18-item *Behavioral Maturity Scale* for each child the same week that the MRT was given. All pupils completed a protocol of the "I Feel—Me Feel," a 40-item inventory designed to assess 5 dimensions of self concepts. Step-wise regression analysis was employed. Only the teachers' perception of academic maturity was a significant predictor of MRT scores.

Lawrence (279) proposed that retarded readers would be helped as much or more by improving their self esteem through counseling than they would by remedial reading. In a series of studies, he used children of junior age assessed on the *Schonell Graded Reading Test* to be at least 2 grades behind that expected for their chronological ages. In the first study, subjects were given the

Children's Personality Questionnaire (CPQ) Form A. Neither the CPQ nor teacher's assessments indicated emotional disturbance, although on the 'O' Factor, which Cattell refers to as a crude measure of self-image, the retarded children scored significantly higher than did a random sample of 30 good readers at the same schools. In this study, subjects were drawn from 4 schools. Group 1 received remedial help from a specialist teacher; Group 2 received individual counseling from a psychologist; Group 3 received both counseling and remedial help; Group 4 received no special help. At the end of 20 weeks, the order of highest to lowest improvement in reading attainment was counselled only, counseling and remedial reading, remedial reading only, and no special help. The differences between the counselled only and the last 2 groups were statistically significant. There was also a positive change in 'O' Factor scores on retest with CPQ, Form B. In the second and third studies, matched control groups were obtained in each of the schools and counseling was provided by a non-professional after suitable briefing by the psychologist. In the second study, 2 schools were used, and in the third study, 4 schools were used. In both studies, the counselled groups improved more than the non-counselled groups, reaching statistical significance in one of the schools in the second study and in 3 of the schools in the third study.

The research by Lund and Ivanoff (299) proposed to identify differences in self concept among college freshmen grouped by reading ability. The total group was divided into the following 6 subgroups based on reading scores, enrollment in a college reading program, and sex; 34 males (Group A) and 10 females (Group D) with depressed reading scores enrolled in a reading course; 67 men (Group B) and 25 women (Group E) with depressed scores but not enrolled in a college reading skills course; and 43 male (Group C) and 48 female (Group F) students, randomly selected, with reading scores above the cut-off point. The *College Entrance Examination Board*, Verbal (V) and Mathematics (M); the *Nelson-Denny Reading Test* (NDRT); and the *Adjective Check List* (ACL), a measure of self concept, were all administered. A score at or below the 35th percentile on the NDRT constituted a depressed reading score. Significant differences were found on the ACL for men on 7 of the 24 scales and on 10 of the scales for women. Group A obtained significantly higher scores on defensiveness, self control, endurance, and order scales than did B or C. Group D females scored higher on the achievement scale and lower on the succorance scale than did E or F groups.

The extent to which a reflective or an impulsive response style is related to the academic performance of retarded subjects was studied by Haves and Prinz (207). Subjects were 91 girls and 144 boys from classrooms for the mildly retarded. Teachers were asked to rate subjects for reflection and impulsivity on a 5-point scale. Reading, arithmetic, and spelling achievement ratings were also obtained (source not given). Intercorrelational analysis indicated an *r* of .22 for girls and an *r* of .17 between IQ and reflection-impulsivity scores. Children seen as compulsive tended to score more poorly on achievement measures than did reflective individuals.

Aaron and Muench (1) assessed the effects of a structured study or story characters following the format of a taxonomy of comprehension on the perceptions of 14 behaviorally disordered teenage boys. The subjects, aged 14 to 18, were chosen on the basis of low scores on the *California Test of Personality*; very low scores on the subtest of Sense of Personal Worth were prevalent. Subjects were further tested with the *California Achievement Test* to determine functional reading levels, which ranged from sixth to ninth grades. Subjects were then randomly assigned to one of 2 groups: a control (unstructured discussion) and experimental group (structured discussion). Six stories were chosen from a published reading series to be used in the study. Readability, as determined by the Flesch formula, ranged from fourth to sixth grade. The 6 stories were then divided into 3 pairs; each pair contained a story with a negative adult figure who exhibited unjust, dishonest, and punitive actions toward adolescent figures with no explanation for these actions. The additional story that comprised each pair contained a positive adult figure who guided adolescents and who always explained any punitive action taken toward younger characters in the story. It was hypothesized that unstructured discussion would have no effect on controls' ratings of adult authority figures, while structured discussion would significantly affect experimental subjects' ratings of adult authority figures. Change in attitude was measured by a 5-point, semantic differential scale that assessed the factors of Evaluation, Potency, and Activity with bipolar adjective pairs. Study of the first pair of stories served as pretest data, and study of the third pair of stories served as post test data. Treatment consisted of discussions structured along the lines of Barrett's cognitive/affective taxonomy of reading comprehension. The intent of the treatment condition was to develop in the subjects an intellectual and emotional understanding of another person's state of mind and his resultant actions. Controls read the same material and responded to the same measures, but no attempt was made to structure discussions along taxonomic lines. *T*-tests indicated that no significant attitudinal differences existed between the 2 groups after reading the first pair of stories. Experimental subjects rated the negative adult character (Evaluation factor) more negatively than controls. On the factors of Potency and Activity (for the positive adult figure), the experimental group rated the character more positively. There were no significant differences in ratings of the adolescent characters between the 2 groups. The effects of instructional strategies patterned along taxonomic lines and moving from the cognitive to the affective dimensions is discussed.

An emotionally disturbed group and a control group of 25 boys each were involved in a study by Brockman (56) who was investigating the influence of reading comprehension on security. Control and experimental subjects were matched with respect to attendance in either Public or Separate Schools, grade placement, non-language IQ, and socioeconomic background. The *Non-Language Multi-Mental Test* was used to assess intelligence. The boys were also given the *ICS Security Test* and the *Dominion Achievement Test in Silent Reading.* Security score means of the experimental group were lower than those of the control group. Experimental subjects scored about one year lower in reading than did controls. With reading scores as a covariate, a significant difference between the security scores of the 2 groups was noted. With adjustment of the mean security scores for the reading covariate, the means of the 2 groups tended to converge but not significantly. The author concluded that the *ICS Security Test* appears to be a valid measure of security and is almost independent of the reading factor when reading comprehension skills are relatively mastered.

Weissenburger and Loney (532) replicated a study of the relationships among intelligence, achievement, sex, and alphabetic position of one's name. They extended a physician's finding that people whose names begin in the S-Z range are twice as likely to get ulcers as those in the A-R range by investigating the relationship of alphabetic position to teacher ratings of pupils' self esteem, impulse control, and general adjustment. Subjects were 59 first and 76 fifth graders to provide for investigating age as a variable. Subjects whose names began with A-R and S-Z were selected for teacher ratings. Intellectual ability was estimated using the Otis-Lennon IQ with the first graders and the Lorge-Thorndike IQ with the fifth graders. Academic achievement was measured with the *Scott-Foresman*

Reader Level Tests for the first graders and the *Iowa Test of Basic Skills* for the fifth graders. Grade promotion and retention were also used. Chi square was used to examine the relationship between 2 variables and analysis of variance was used for 3 variables. In the few cases where statistical significance was found, results were in the opposite direction for the hypothesis that waiting for one's name to be called has deleterious effects. For example self esteem of S-Z girls was greater than that of the A-R girls. For boys and girls combined, self esteem in the S-Z group was higher at fifth grade than at first grade relative to self esteem in the A-R group.

IV-15 Socio-cultural factors and reading

Scott and Seifert (443) studied the impact of family size on the readiness profiles of 2- to 3-year-old, lower socioeconomic white children. Subjects selected as members of large families had 3 or more siblings; subjects from small families had one or no siblings. Fifty pairs of children matched on the basis of socioeconomic level, sex, and chronological age were identified. All subjects were given the *Iowa Test of Preschool Development* (ITPD). Children from small families scored higher on all 9 skill areas assessed by the ITPD, but only on the Expressive Language skill area was the difference statistically significant.

The effect of father absence on the reading achievement of inner-city black children in grade 4 was the subject of a study by Sciara and Jantz (441). Reading test scores on the *Metropolitan Achievement Tests* for 2 consecutive years were utilized. Factors of sex, IQ as assessed by the *Lorge-Thorndike Intelligence Test*, and family status were used in analyzing the data. Significant differences (.01 level) were found within the factors of sex, IQ, and family status. Pupils from father present homes had higher mean scores than did pupils from father absent homes. This finding held true for both boys and girls.

The influence of a foster home placement program on the scholastic achievement and intelligence of Indian children was the focus of the report by Cundick, Gottfredson, and Willson (94). A total of 46 girls and 38 boys who had participated in the program for 5 or more continuous years and for whom school data were available served as the subject group. Test data were collected from school records only and different achievement tests had been administered to children. More than half had been given the *Stanford Achievement Test* with most of the remaining scores coming from the *Iowa*

Test of Basic Skills and the *California Achievement Test.* Test results were converted to grade equivalent deviation scores for reading, arithmetic, and language subtests. Intelligence test scores, obtained mostly from the *California Test of Mental Maturity* and from the *Lorge-Thorndike Intelligence Tests*, were transformed to a mean of 100 with a standard deviation of 16 in order to make comparisons between tests possible. Means, according to sex, year in program, and year of placement, were computed for the 3 achievement scores and for the verbal, non-verbal, and total IQ scores. When year of placement in the program was held constant as a covariate, no significant differences between sexes were found for arithmetic or language achievement. A significant difference was noted favoring higher verbal and non-verbal IQ means after the first year in the program, but the tendency did not reach significance for the total IQ group. Compared to national norms, the mean achievement score declined with successive years of participation in the program. The authors felt that the results obtained were similar to those found with Indian pupils who remain at home and are educated in public schools.

Callaway, Jerrolds, and Gwaltney (65) studied the relationship of a number of variables to reading and language achievement in 277 tenth graders from rural and small town areas in Georgia. Specifically, information concerning chronological age at time of school entrance, race, and occupation of parent(s) was obtained from school files. Teachers rated each subject on a 5-point scale relative to student's adjustment to the classroom situation, amount of reading material in the home, and family income. Reading and Language achievement data were obtained from the *California Achievement Tests*, while intelligence data were collected with the *California Test of Mental Maturity.* Data analyses included the use of ANCOVA, correlation coefficients, and the *Duncan Multiple Range Test.* Results indicated no differences in reading or language scores relative to age at time of school entrance. The only sex differences that were observed were in language scores in favor of females. Analysis of the variable of race indicated that white subjects scored significantly ($p < .05$ in all instances) higher than black subjects in reading and language, even when IQ was used as a covariate. Subjects who where highest in adjustment to the classroom situation also appeared to be the highest in reading and language achievement. Generally, subjects who were rated highest in amount of reading material at home were also highest in reading and language achievement; the same result was repeated when family income was examined. No significant differences in achievement were apparent between groups whose fathers or mothers worked and groups whose fathers or mothers did not work. Occupational status of the principal wage earner also appeared to be unrelated to reading and language achievement.

IV-16 Reading interests

Zimet and Camp (558) analyzed reading preferences of first graders in order to determine library book preferences of innercity black children, and to compare the preferences of these children to white middle class first graders. Children in the innercity school setting frequented the school library once every other week from February to June; records were kept on what books were checked out and the sex of the borrower. The same records were kept for children in the suburban school setting, but these children were allowed access to the school library twice weekly from September until June. A total of 670 and 639 first grade titles were available to the 2 groups respectively. In each school, girls checked out more books than boys. Fourteen most preferred books from each school were subsequently chosen for further content analysis. Content analysis indicated similarity among the 2 groups of books on the following indices: 1) characters, 2) predominant activity or theme, 3) the outcome of each story, 4) the appropriateness of the activities described in the books for first graders (no books had activities that were judged appropriate for subjects older than 7 years), and 5) the proliferation of sex stereotypes (in each sample there were more boy-activity than girl-activity stories). The groups differed on the following indices: 1) innercity books relied more often on multiple "agents of help" and self-help to determine story outcomes, while suburban books relied heavily on animals as "agents of help"; 2) of the 14 preferred books, 5 in the innercity and 3 in the suburban group had characters other than white; 3) settings of books for the suburban sample were balanced between urban and rural, with no books in this group set in suburban areas; 2 of the 14 books for the innercity group were set in the innercity, while 5 dealt with "make believe" settings.

Kirsch (262) investigated the expressed reading interests of first and second grade children, compared first to second grade subjects in terms of reading interests, and studied the derivation of reading interests. Subjects were demographically chosen representing both innercity and suburban areas, and included 465 whites, 471 blacks, 123 Spanish-surnamed, and 19 from other ethnic groups.

Distributions of boys and girls and of first and second graders were nearly equal. Each child was individually interviewed and asked to draw a picture showing what he would like most to read or have read to him; following completion of the picture, a structured interview was conducted to further pin down reading interests. Following the interview, the Draw-a-Man Scale from the *Goodenough-Harris Drawing Test* was administered for an indication of IQ. Information concerning reading ability, SES, and racial-ethnic group of teacher was obtained from observation or school records. Drawings and interviews were subsequently clustered into categories that included 1) scientific information, 2) historical information, 3) contemporary information, 4) realistic fiction, 5) imaginative fiction, and 6) humor. Generally, topic choices of second graders indicated more interest in factual information. First grade readers ranked categories 4, 5, 1, 3, 6, and 2 in order of preference from high to low. Significant differences were found relative to sex and reading level, but not to geographical area, urban-suburban setting, SES, or racial-ethnic group of child or teacher. High IQ first graders had a more even interest distribution; and those with high reading levels indicated more preference for contemporary information and less for realistic fiction. Second graders ranked the 6 categories from high to low in the following preferential order: 5, 1, 3, 4, 6, and 2. At the second grade level, girls showed more interest in fiction than boys, blacks liked imaginative fiction best, Spanish-surnamed subjects preferred realistic fiction, and white subjects showed preferences for scientific information and contemporary information. When asked about a source of interest in reading, responses identifying television prevailed (28 per cent). While additional sources were named, 20 per cent of the subjects could not trace the source of reading interest. The author discusses the surprising breadth of reading interests demonstrated by young children in the study as well as some of our misconceptions about reading interests of children, and how we might capitalize on these interests in building curricula and designing materials.

Johns (240) explored the reading preferences of innercity children in intermediate grades relative to the types of characters, settings, and character interactions subjects preferred to read about. At each grade level, 199 children were tested, the preponderance of whom were black. A questionnaire was developed in 3 phases. The first phase exposed subjects to 5 pairs of illustrations from trade books that depicted actual settings of books, both innercity and suburban. Subjects were asked which illustration in each pair was most like where they lived, where they would most like to live, and which they would prefer to read about. A similar procedure in phase 2 involved the depiction of characters with positive or negative self concepts, while phase 3 included a consideration of positive or negative group interaction. Data analyses were conducted using t-tests and a multivariate ANOVA with the variables of age, grade, sex, intelligence, and race. Black children chose significantly ($p < .01$) more often books depicting middleclass settings, characters with positive self concepts, and characters in positive group interactions. All black subjects preferred books with pleasant settings, but this preference steadily diminished as the age of subjects increased. Girls chose books with positive group interactions more often than boys, whose preferences in this regard were neutral. No significant differences were found regarding intelligence or race.

The purpose of the study conducted by Brown and Cook (58) was to determine if reading interests related to sex of students affect the performance of those students on measures of critical thinking. The stimulus materials were adapted from basals being used with children in the study; all subjects had read the material previously. Tests over each of the 2 stories used were designed to measure the abilities to distinguish relevant from irrelevant information and to draw inferences. To control for reading ability, the measures of critical thinking were read orally to subjects while they read the tests silently. Using a 2-factor mixed design, subjects were compared in general ability and to determine whether boys performed better on boy-interest questions and girls better on girl-interest questions. There were no significant differences between boys and girls in terms of general critical thinking ability as measured by the 2 tests. However, "the significant differences in the tests seem to indicate that the material of the tests did vary as far as sexual orientation was concerned" and that the main finding of the study "indicates a significant difference between performance and the sexual orientation of the material."

IV-17 Readability and legibility

In 2 experiments, Spencer, Reynolds, and Coe (473) studied the effectiveness of 6 spatial and 3 typographic coding systems used with 18 different styles of bibliographical entries. In the first experiment, entries were by authors' surnames; in Experiment 2, entries were by titles. Eighteen bibliographies of 40 entries each were compiled. Bibliographies were typed in 9 point Press Roman, 1 point leaded, with a maximum length of 20 picas. Subjects were 36 graduate library students who were required to find and underline the authors' names or titles on the 18 bibliographies under time constraints of 45 seconds in Experiment 1 and of 1 minute and 45 seconds in Experiment 2. The differences between the spatial coding systems were found to be greater than those between the typographic coding systems for the alphabetic search task of Experiment 1. Of the typographic coding systems, the one with authors' surnames in capitals was significantly more effective in Experiment 1 but the one in which titles were in bold was the most effective in Experiment 2. The results suggested that where information is to be retrieved only via the alphabetically ordered first element of each entry, spatial coding is more effective than typographic coding. The use of capitals for authors' surnames may be worthwhile in addition to spatial coding. Other appropriate possibilities are presented for particular circumstances.

Effectiveness of the cloze procedure in determining textbook suitability was examined by McNinch, Kazelskis, and Cox (329) for 184 college freshmen as subjects. Cloze passages were taken from 4 textbooks randomly selected from freshman courses at the University of Southern Mississippi in social science, English, mathematics, and science. The selected paragraphs were grouped into content booklets under 3 deletion conditions that included deletion rates of 5, 7, and 9 words. First and last sentences were left intact. Each of the 4 passages was modified by the 3 deletion patterns for a total of 12 cloze tests. The *Nelson Denny Reading Test* was administered to identify the good and poor readers among the subjects who were randomly assigned to read and respond to a cloze passage from one of the 4 content areas in one of 3 deletion patterns. Data were analyzed in a 4 × 3 × 2 analysis of variance with subject matter, deletion pattern, and reading achievement as factors. Mean comparisons indicated that good readers attained higher cloze scores than did the poor readers with means of 38.85 and 29.65 respectively. Comparison of simple effects of interaction between subject matter and deletion rate did not produce a consistent pattern. Passages in math and English each showed the highest passage scores on the seventh word deletion rate. History passages did not differ by deletion rate, and the fifth word deletion in science material produced the lowest score with little difference on the ninth and seventh deletion pattern.

Rothkopf and Coatney (414) studied the effects of reading ease of prose materials on the subsequent inspection rates of 92 college subjects. Two versions of a 1,271-word passage concerning the geography and history of Thailand (19 paragraphs) were used. The first version (standard) was rewritten by complicating sentence structures and using less frequent vocabulary (difficult); Flesch Reading Ease scores were 51.03 and 20.14 respectively. In Experiment 1, half of the subjects (N = 23) saw all 19 paragraphs in the standard version. The remaining subjects in the group saw the first 10 paragraphs in the difficult version and the final 9 in the standard version. In Experiment 2, 23 subjects saw all 19 paragraphs in the difficult version, while the remaining subjects saw the first 10 paragraphs in the standard and the final 9 in the difficult version. Reading was done via a slide presentation; subjects were directed to read each text slide as rapidly as possible, learning the essential elements of the content. A criterion cloze test consisting of the 19 paragraphs, each in the version seen during the experiment, was administered; 9 substantive (*i.e.*, important nouns, adjectives, verbs, etc.) terms were deleted from each paragraph. Inspection rates were automatically recorded when subjects switched slides. Separate ANOVA's were run for each experiment. Results of Experiment 1 indicated that inspection speed (in syllables per minute) was greater in the standard version. In the mixed version, differences between treatments in inspection rates in paragraphs 1-10 tended to persist for paragraphs 11-19. Slower inspection speeds were accompanied by better performance on the cloze test. Overall, subjects with the difficult/standard treatment learned more than those who read the complete standard version. Results in Experiment 2 demonstrated no significant differences between groups on the criterion measure, although subjects in the standard/difficult treatment tended to have higher inspection rates than those reading the difficult/difficult version.

Klare, Sinaiko, and Stolurow (263), in 2 studies, attempted to discover which cloze deletion patterns work best with poor reading adults, and if the cloze procedure could be used to assess translations of technical English. In the first experiment, a total of 100 adult basic education students reading on fourth and sixth grade levels and 23 college subjects were exposed to a 292-word passage under conditions of every fifth, eighth, eleventh, and fourteenth word deletions. Following the cloze test, all ABE students were given a 4-item attitude scale. Only identical words were counted correct in the cloze task. Data analyses showed that for all deletion patterns except every fifth word, the majority of ABE students attempted every blank and there was a positive relationship between subjects' cloze score and attitude toward the task. Cloze tests were also found to be challenging to college subjects. The best deletion pattern for ABE students appeared to be every ninth or tenth word. In the second experiment, a 250-word passage concerning helicopter maintenance that had been transplanted into Vietnamese by 12 different translators was used as stimulus material. An expert linguist and scores on a resultant knowledge test were used in choosing both the best and worst translations. The material was rewritten in cloze with an every seventh word deletion and administered to 28 Vietnamese airmen; 31 U.S. airmen received an English version and therefore served as controls. Results indicated a 6 per cent performance differential between the "good" and "poor" translation subjects, and higher scores for the experimental group when compared to controls. The authors discuss these results and provide an extensive review of literature and bibliography concerning the cloze procedure.

Golub and Kidder (174) describe a procedure for computer analyzing the syntactical maturity of language samples. The major problem in assessing syntactical density of written materials is that the procedures are time consuming, require special training, and, therefore, cannot be realistically employed for the purposes of assessing reading materials, diagnosing the syntactical development of children, and matching materials to learners on the basis of equivalent syntactical levels. The *Golub Syntactical Density Score* (GSDS) is described; it involves the measurement of 10 variables that load on syntactical difficulty including ratio of words to T-units, subordinate clauses to T-units, main and subordinate clause length in words, and number of various verb forms and parts of speech. The GSDS has been programed in PL/1 for the IBM 370/165. Two hundred-word samples from graded reading materials, grades 1 to 14, were hand tabulated by a trained examiner, then analyzed by the program. With regard to some of the variables, the program was more accurate. Comparison of remaining variables revealed a high correlation between hand and machine scoring. The potential uses of the programed GSDS are discussed and a Vocabulary Intensity Index is proposed.

Schlief and Wood (434) attempted to assess the utility and comparability of the cloze procedure as a measure of readability with non-text materials. Reading materials were sampled from 10 different categories, including agriculture, science, hobbies, sports, and newspapers. One reading passage was then chosen from each category; a cloze test was then constructed on each passage (passage length was 225-250 words) with an every tenth word deletion. Further, each passage was assessed for readability with 9 formuli including the Dale-Chall, Flesch, Gunning Fog Index, and McElroy's Fog Count. A total of 76 subjects—20 fourth graders, 30 sixth graders, and 26 eighth graders—responded to the cloze tests as well as the reading comprehension subtest of the *Gates-MacGinitie Reading Test*. Instructional scores from the Gates-MacGinitie indicated that cloze scores in the range of 45 to 55 per cent identified instuctional reading level. All readability formuli were then correlated with cloze scores. The coefficients of correlation were subjected to statistical analysis and were not found to be significantly different from zero at the .05 level of significance. These correlations ranged from −.178 to .288, indicating that as readability measures, the formuli and cloze estimates were not equivalent.

Spooncer (474) compared distributions of scores on a cloze test to those on standardized measures. Using history materials designed for school use, Spooncer utilized an every fifth word deletion within 2 conditions: with deletion blanks uniform, or with the blanks varied in length and acting as clues to the deleted words. No differences on cloze performance were uncovered within these 2 formats. In the initial part of the study, the cloze task was administered to 68 subjects and performance on the task was compared to that on the *Daniels and Diack Test of Reading Experience*. No trends were evidenced in this comparison, since the Daniels test appeared to be too easy for the majority of the subjects and did not discriminate as well as the cloze task. In the second part of the study, the same cloze task was administered to 66 students. In addition, scores for these subjects were also available on the *Vernon-Warden Test*, a test of sentence completion, and on the *Moray House Test* of verbal reasoning. Although correlation coefficients were not computed, the author reports that as cloze scores increased; so did scores on sentence completion and verbal reasoning tasks, indicating that these 2 abilities contribute to cloze performance.

Witt (550) examined the effect of numerical data in a scientific article on reading time and comprehension. Two versions of an article about air pollution were prepared. One carried 12 numerical references, while the other used descriptive modifiers where numbers occurred in the first version. All numerical references were in familiar units. Except for the numerical data, the 2 passages were equivalent in terms of length, number of sentences, and readability. A

10-question factual quiz was constructed over the article. The 2 versions were administered to 100 university students; each recorded his reading time. Numerical references were found to have a significant effect on reading time by increasing time spent in reading the article. The effect of numerical references tended to result in lower comprehension, but the effect was not significant.

Coke (84) examined the relationship among difficulty levels of material being read, oral reading rate, and silent reading rate with high school and college subjects. In Experiment I, 20 college subjects read 90 prose passages chosen from similar research studies, technical journals, and non-technical books in a university library; this material covered a wide variety of topics. The passages were presented via slides, the presentation being controlled by the subjects. Subjects read the material aloud while reading time was recorded for each subject reading each passage. Two measures of length were obtained for each passage: the total number of words and an estimate of the total number of syllables. Two indices of readability were calculated for each passage: the average word length in syllables and the average sentence length in words. A one-way ANCOVA was used in data analyses. Number of syllables appeared to be a better predictor of reading time ($r = .94$) than was number of words ($r = .76$), implying that subjects read all passages at a reasonably constant syllable rate. Reading rate remained constant, then, over a wide range of difficulty of materials. Neither average word length in syllables nor average sentence length in words was a good predictor of syllable rate. In Experiment II, 32 passages from the original 90 were read by 60 high school subjects under 3 conditions: 1) passages were read aloud and pronounceability was judged by each subject, 2) passages were read aloud and material was judged according to how hard it was to understand, and 3) passages were read silently and rated for comprehension difficulty. Ratings were done on a 5-point scale. A short-answer comprehension test with 2 items representing each passage was administered after reading. A fourth group of 26 subjects functioned as a control group by taking the test without reading the passages. Under all reading conditions, subjects read the passages at a reasonably constant syllable rate, regardless of difficulty level of material or reading condition. Subjects who read the passages averaged more than 50 per cent correct on comprehension items, while controls averaged less than one per cent, ruling out an explanation of superficial processing in the first experiment. Both experiments are discussed in regard to current methods of measuring reading rate and readability.

V. *The teaching of reading*

As compared with the previous year's section, the subcategory related to testing and test development shows a marked increase in size. As it has in past years, the interest in research in this area particularly reflects researchers' concerns for predicting reading success.

V-1 Status of reading instruction

The results of a survey of reading attainment of 11- and 15-year-old pupils in Northern Ireland was conducted by the Northern Ireland Council for Educational Research and reported by Wilson (546). The principal purpose of the survey was to obtain as precise a picture as possible of the prevailing achievements of reading. Reading test NS6, which had been constructed at the National Foundation for Educational Research in England and Wales and used in national surveys there, was administered by teachers in Northern Ireland and scored by the Ministry of Education. A 2-stage sampling procedure was used: First, by schools stratified by size and second, by pupils according to chronological age. Mean reading scores and the ranges of reading scores were used for the various comparisons. Although there was very little difference in the mean reading for boys and girls, marked differences were noted in the range of scores. The 11-year-old boys showed a greater range in reading attainment and a greater incidence of reading retardation than girls; the difference persisted at age 15 but to a much lesser extent. Since the 15-year-old sample represented both grammar and secondary school pupils, the scores for both school levels were analyzed. A considerable degree of overlap was found. This overlap was also found when a comparison was made of the 11- and 15-year-old subjects. It was noted that the test was too easy for the able 15-year-old pupils and discriminated adequately among only those pupils whose reading scores were in the lower half of the range. The extent of the overlap revealed the wide range of competence in reading in both age groups. For example, more than one-half of the 11-year-old pupils obtained scores comparable in range and frequency with the scores obtained by a similar proportion of 15-year-old subjects. When compared with subjects of the same age levels in England, the Northern Ireland pupils scored less well. At age 11 the difference was approximately 2 months, and at age 15 the difference was almost 7 months. In the 11-year-old group, the girls in both countries had similar scores, but the Northern Ireland boys in the lower 20 per cent scored less well than their counterparts in England. In the 15-year-old group, the greatest difference was among girls with the Northern Ireland girls averaging approximately 10 months lower than the English girls. Details of the analysis of the different comparisons are included in the appendix.

A representative sample of 10 per cent of Northern Ireland primary schools were surveyed by Wilson (545) to investigate the current practice in the teaching of reading and arithmetic to young children. From head teachers, a questionnaire obtained information on school policies and practices with regard to age of pupil entry, provision for young entrants, methods and materials for teaching, and class organization. Some of the survey results disclosed that most teachers reported that home backgrounds of school entrants have a strong bearing on later success or failure in reading. Ninety-nine per cent of the sample of teachers use a series of graded readers. All the teachers in the sample employ a "look and say" method to teach reading in the early stages of learning. Four out of 5 teachers prefer to group their pupils for reading instruction. Most teachers in the sample considered that all or nearly all of their pupils require direct assistance from the teacher including the teaching of phonics. In their teaching of phonics, teachers rely on phonic word groups, employing word building and word breaking exercises. However, the majority of teachers encounter difficulties in the teaching of phonics and reported that the problems related to not only the symbol-sound inconsistencies of English orthography but also the poor speech of pupils, poor hearing, or poor auditory discrimination. The report included many other findings relating to homework, record keeping, testing, parents, books, and library services.

V-2 Comparative studies

The reading standards of children in Wales were surveyed in 1971 and reported by Horton (222) chiefly to measure attainment in English and Welsh reading comprehension among children aged around 11 and 15. Data from the 1971 survey were also compared with the data from past surveys of children in Welsh and English schools. Sample populations for the 2 age groups were drawn from schools with consideration to linguistic region, school type, and school size as stratification variables. The reading tests used in the survey were the *Watts-Vernon Test* (WV) and the *National Survey Test Six* (NS6). Comparison of mean scores of 11 year olds on WV and NS6 tests in the results of 3 surveys show that there was a significant difference between WV means of 1956 and 1971 in favor of 1971 but no significant differences between the NS6 means of 1960 and 1971. Comparisons of mean scores of 15 year olds favored the results of the 1971 survey with scores statistically significant for both measures. Many detailed findings are also reported that related to a variety of comparisons of mean scores of the subjects by sex, school type, region, and linguistic groups as well as to comparisons with findings from other surveys in Wales and in England.

Data from the International Studies in Evaluation for reading comprehension, literature, and science were used by DeLandsheere, Grisay, and Henry (103) to analyze the performances of high achievers in Belgium in comparison with the performances of high achievers in other countries. High achievers were classified as students who scored above a certain cut-off point on internationally administered academic achievement tests. Findings showed that for reading comprehension at the elementary level, about 5 per cent of Belgium students were classified as high achievers in comparison, for example, with 17 per cent for Sweden and 9.5 per cent for the United States. Similar findings ranked Belgium children relatively lower in frequencies of high achievers in literature than the frequencies of high achievers in other countries studied.

A criterion of 80 per cent correct responses to test passages was used by Lewy and Davis (287) in a survey to assess reading mastery of subjects in Israeli schools. Reading passages in the study were taken from the *International Studies in Evaluation: Test of Reading Comprehension*. Separate scores were obtained for each of 8 reading passages for 3 population levels and treated according to classification of students as regular or academic and disadvantaged or vocational, and total. Among the findings, there were differences in the proportion of students mastering different reading passages according to age level of subjects and their classification, favoring older students and those classified as regular or academic.

V-3 Early reading

Children who learned to read in school at age 4 were studied by Durkin (123) in a 6-year investigation of 33 children who participated in a 2-year, pre-first grade language arts program. Performances in reading of the experimentals were compared with performances of classmates who did not participate in the program but who had attended kindergartens where some attention was given to numeral and letter naming activities and to the development of a small reading vocabulary. For each of the 4 years during grades 1 through 4, the reading achievement of experimental subjects exceeded that of the control group. However, with reading test raw scores as the experimental variable and intelligence test raw scores as a covariate, an analysis of covariance indicated that the differences in grades 1 and 2 were significant beyond the .05 level. In grades 3 and 4, the differences were not significant.

Four kindergarten classes at Title I schools were used by Luna (298) in a study of Distar Language and Reading Programs. Two classes were randomly assigned considering pupil age to the experimental group, and 2 classes were assigned as the control group. Standard Distar methods and materials were employed in the reading and language programs for the experimentals. Instruction was provided to groups of 10 pupils following standard Distar program directions. Except for Distar treatment to experimentals, all 4 classes received the regular kindergarten program of instruction. The experiment was carried out from November to May of the kindergarten year. Pretest and post test scores were obtained on the *Stanford Early School Achievement Test* (SESAT) to measure the main effect. A multivariate analysis of covariance was employed to test the data. On the post test, the experimentals achieved higher mean scores on the subtest Letters and Sounds of the SESAT than did the controls. No real differences were found on the SESAT Oral Comprehension and Environment subtests between performances of the experimentals and controls. In analysis of the effect of age grouping, the multivariate F was found to be non-significant.

Preschool classroom experience and first grade achievement were explored by Huberty and Swan (224) to study correlates of academic success for 2 groups of young children with different early experiences. One group consisted of 49 children who participated at age 3 in an experimental program in mathematics, language arts, social studies, and science for 3 years and in art, music, and physical education for 2 years prior to entering first grade. The other group included 58 children who did not participate in the experimental program prior to first grade. Both groups were from a southeastern suburban county. Variables of the study for both groups included demographic factors of race, sex, sibling number, sibling position, and socioeconomic status of parents. Test data were collected on intelligence, general behavior, reading readiness, and academic achievement. Both canonical and multiple correlational techniques were employed in analyzing each of 4 combinations of the variables as identified through the procedure of principal component analysis.

From canonical correlations findings, there was an underlying relationship between selected sets of achievement and sets of nonachievement variables for both groups. The results of the multiple correlation analyses disclosed that for children with specific early experiences, the behavior variables were better predictors of academic achievement that were the readiness test scores. However, for the children not having formal preschool experiences, the best predictors of many types of first grade achievement were scores on readiness measures. Other specific results were also presented in the study.

Reading-related behavior of 8 preschool children was studied by Haskett and Lenfestey (203) to assess the effects of novelty and modeling on preschoolers in an open classroom. All subjects were from middleclass to professional family backgrounds. University undergraduates served as tutors in the experiment. Behaviors of subjects and tutors were recorded during two 15-minute free play sessions each day over several weeks. Experimental conditions involved controlled settings of regular introduction of new reading materials and of modeled reading behavior of tutors through oral reading to groups of subjects. Results showed that introduction of novel books into the classroom increased some children's attention to books, but reading aloud by tutors produced more frequent attention by the subjects to books with increased stability of such behavior. There was also found a relative increase in frequency of independent and a relative decrease in mutual-peer reading-related activity.

The effects of "Plaza Sesamo," a Spanish version of "Sesame Street" was investigated by Diaz-Guerrero and Holtzman (110) in a controlled study using 221 preschool children in 3 day-care centers. The investigation evaluated the program during its first telecast season in Mexico City. Experimental and controlled subjects were randomly selected according to age and sex. Complete data were secured for a total of 173 preschoolers. Experimental and control children were treated alike except for programs viewed on television. While experimentals viewed "Plaza Sesamo," the controls saw cartoons or other non-educational programs. A battery of 9 tests was individually administered pre-, during, and post-telecast conditions. Most of the tests were translated and adapted from similar tests developed by the Educational Testing Service for use in its evaluation of "Sesame Street." Measures of attention to the program and of attendance were also taken. Three different statistical treatments were employed in analyzing the data. Intercorrelations among the 9 major tests were of generally low order. Highly significant differences were found for specific achievement tests dealing with general knowledge, numbers, letters, and words as taught by "Plaza Sesamo" in favor of the experimentals. Significant differences were also found for 5 cognitive tests only indirectly related to "Plaza Sesamo" as well as for Oral Comprehension, a test unrelated to program content. The largest differences occurred in 4 year olds; the smallest in 3 year olds. The rate of learning was consistently faster for the experimental groups than the controls across the 3 testing periods. Amount of attention correlated as high as .49 with gains as measured by several tests. Low but significant correlations were found between attendance and amount of gain.

Cognitive development in early readers was examined by Briggs and Elkind (54) in a study of 16 matched pairs of 5-year-old readers and non-readers. Most children in the study came from white middleclass families. The subjects were administered a battery of perceptual, motor, cognitive, and personality tests. In addition, data were collected from parent interviews on reading-related experiences at home. Factorial analysis and discriminate analysis of the test scores favored the early readers on conservation tasks as measured by *Goldschmid-Bentler Conservation* battery and on reflection-impulsivity as measured by *Kagan's Matching Familiar Figures Test*. A separate analysis of the interview data disclosed that mothers of early readers had more education and were at a higher occupational level than the mothers of the non-early readers. Also fathers of early readers read more to their children than did fathers of non-early readers. A number of the early readers appeared to have an older child or friend who spent considerable time reading to them.

V-4 Reading readiness

Preschool experience and kindergarten readiness of disadvantaged children were examined by Lewis and Grangaard (286). Two groups, 27 nursery school pupils and 65 pupils who did not receive any formal prekindergarten experience, were subjects of the study. Seven subtest scores on Jordan and Massey's *School Readiness Survey* were used to judge the effect of a structured nursery school experience on kindergarten readiness. *The Visual Symbol Environment: A Preschool and Kindergarten Education Program* was used in the nursery program. Comparison of mean scores of 2 groups was not significant.

Potential learning problems in the kindergarten child were explored by Bradley (49) in a 2-year study involving 1,641 kindergarteners. Two groups of experimentals were used. One consisted of 435 pupils who were enrolled in a traditional kindergarten program. The teachers were given results of a pretest and a learning profile on each pupil. The second experimental group of 406 kindergarteners received the same program, and, in addition, received individual treatment in their weakest modality as determined by a team of specialists. The same pretests and post tests were used. A total of 804 controls were also part of the study. It was found that specifically designed strategies were no more effective in improving the perceptual and cognitive abilities of children than were the more general approaches of the regular kindergarten program based on early test information.

The 1972 reading readiness scores of 232 first graders were compared by Scott (442) with the 1962 norms secured on the *Tests of Primary Mental Abilities*. Low and Middle socioeconomic levels were represented in the study. Results showed that on subtests of Verbal Meaning, Perceptual Speed, and Number Facility, there were higher mean scores for both lower and middle socioeconomic subjects than for the norming population a decade earlier. No differences were noted on the subtest of Spatial Relationships.

The effects of 2 Head Start programs were evaluated by Borden, Wollenberg, and Handley (46) on school progress in first and second grades of 144 rural disadvantaged children in Tupelo, Mississippi. A total of 67 pupils who had not participated in the Head Start program and who had similar backgrounds served as controls. Both experimentals and controls particpated in an intensive Follow Through program. Central to the 2 Head Start programs was Distar instruction in various subject areas as well as the traditional developmental Head Start activities. Head Start I pupils received Distar Language I instruction, and Head Start II pupils were taught reading, arithmetic, and spelling through Distar. The Follow Through program centered on the Englemann-Becker Model for Direct Instruction as its paradigm. Used as the instrument for collecting IQ data was the *Slosson Intelligence Test*. Achievement was measured at the end of first and second grades with the *Wide Range Achievement Test* (WRAT) and the *Stanford Achievement Test* (SAT). Two independent variables—group membership and sex,—plus their interaction variable—were plotted against 7 dependent variables measuring pupil growth through analysis of variance from the Biomedical Computer Program series. No significant differences in intelligence and achievement among the groups were found at the end of the first school year. However, at the end of the second year, significant differences in reading, arithmetic, and spelling achievement were noted in favor of only Head Start II pupils.

Scores were correlated between 5 measures of conservation and measures of readiness and intelligence in a study by Brekke, Williams, and Harlow (53) which used 81 first graders as subjects. In the beginning of the school year, each subject was administered individually the *Gates-MacGinitie Reading Test: Readiness Skills* (GMRTR), the *Primary Mental Abilities Test: Grades K-1* (PMA), and Procedures of Conservation of Number and Substance which were organized in 5 tasks to assess acquisition of conservation. Conservation performances were found to be positively correlated with readiness scores on the GMRTR with a range of .241 to .376, and a slightly greater range of correlations was found when readiness scores were correlated with scores on the PMA.

In another study on conservation, Brekke and Williams (51) sought to determine the predictive value of conservation tasks on the reading achievement of 72 first grade children who were enrolled in 4 classrooms in 2 upper-Midwest schools. During the first month of the school year, each subject was administered the *Gates MacGinitie Reading Test: Readiness Skills* (GMRTR), *SRA Primary Mental Abilities Test: Grades K-1* (PMA), and 5 tasks of conservation, including 2 tasks with conservation of number and 2 with conservation of substance. The *Gates MacGinitie Reading Test Primary* (GMRTP) was given during the eighth month of the school year. All standardized tests were administered to the children as a group. Only the conservation procedures were given individually. Findings showed that conservation and intelligence ratings were positively related to subtest scores on the GMRTP. However, neither conservation nor intelligence made any significant independent contribution to the prediction of the reading measures when readiness scores were considered in the predictive value. When intelligence and reading readiness were separately partialled out of the relationship between conservation and Vocabulary or Comprehension of the GMRTP, the partial correlations dropped to a near-zero value.

Disadvantaged children and their first school experiences were examined by Shipman (450) as part of a longitudinal study for the Head Start Research Office. The chief purpose was to determine the components of early education that were associated with the cognitive, personal, and social development of disadvantaged children. Also sought were the environmental and background variables that moderate these associations. The report centered on data collected during the first year of the study in Spring and Summer 1969. The study involved over 1,800 children, ages 3-9 and 4-8. The sample was drawn from 4 different communities in the United States where elementary school districts had a substantial proportion of the population eligible for Head Start. The information collected for the study included variables on a) the status and process of the families of head starters, b) the background and related characteristics of teachers in the program, c) the physical and organizational qualities of the school, d) the program components and personal relationships of the classroom, and e) the community, and f) the personal, social, developmental characteristics of the child. Data on 46 variables were treated by factor analyses for the composite sample and for a variety of subject classifications, including age, sex, and SES level. Among the findings, a general factor defined as information processing skills accounted for most of the common variance among cognitive tasks. This factor was best represented by performance on the *Peabody Picture Vocabulary Test* and on a preschool inventory to measure the ability of subjects to process general information from the environment. Also, differences among groups were noted, and tasks relating to general ability appeared to be a function of age and experience. Thus, information processing skills, conceptual understandings, and favorable responses to the testing situation were greater for older children and for those from families of high socioeconomic status.

V-5 Teaching reading—primary grades

The effects of 2 beginning reading programs and verbal feedback were compared by Nelson (353) on the reading performance of 64 kindergarten children after 11 weeks of instruction. Programs compared were the phonics approach in *Lippincott Basic Readers* and sight approach in *Scott-Foresman Basic Readers*. Two types of verbal feedback were employed in both reading approaches. Praise was given for correct reading responses; criticism followed incorrect reading responses. Four experimenter-teachers were used, each one teaching under both experimental conditions. Observers were used to check the ratio of positive and negative personal-emotive comments that were met in the experiment. A variety of program and standardized tests were used as post measures of reading achievement. It was found that the phonic approach produced a reading response of letter-sound combinations, and the sight approach produced recognition of a limited number of words. There were no consistent differences for the variables of teacher, intelligence, or sex, or for their interactions with method. A very slight trend was noted for verbal feedback contingent on incorrect reading responses, which was found to be more effective than positive verbal feedback contingent on correct reading responses.

Instructional pace differences and their effect on reading achievement was investigated by Barr (20). Pace in basal reading instruction was defined as the rate that children proceed through their basal readers or the number of the new words to which children are exposed. In some study, 19 pupils paced homogeneously were compared with 20 students paced differentially. In a second study, 45 pupils from 4 classes that differed in differential pacing were compared. Subjects were classified in terms of aptitude as measured by the *Word Learning Tasks* and the *Metropolitan Readiness Tests*. Pace was operationally defined, for the study, as the number of new basal words introduced to a student within a specified time period. Two pace measures were obtained, one in December and the other in May of the experimental year. Information was secured from teachers to determine the pace of introducing new words for the subjects. Three measures of reading achievement were used, including a test sample of basal words, the *Wide Range Achievement Test*, and the *Gates-MacGinitie Reading Test*. Multivariate analysis was used to test the main effects. Findings indicated that in classes that were differentially paced at relatively high rates, mean level of word learning and variance were higher than for classes differentially paced at slow rates or for those homogeneously paced. Generally, a faster rather than a slower pace facilitated the learning and mastery of a sight vocabulary for most high aptitude and some average pupils. All low aptitude pupils were paced slowly; their word learning and mastery tended to be low in comparison with that of other children. For subjects paced differentially, basal words learning during first grade accounted for a considerable portion of the variance of word recognition measured at the end of first grade and of vocabulary and comprehension measured at the end of second grade. Although the trends were the same for pupils paced homogeneously, the per cent of shared variation was considerably less.

The effects of i.t.a. on reading achievement of 26 Mexican-American bilingual fourth graders was studied by Robertson and

Trepper (403). Twenty-six controls were used and were taught reading with T.O. materials. A variety of reading achievement tests were employed as criterion measures. Results of mean comparisons showed that the i.t.a. group scored significantly higher on all tests than did the T.O. group.

From a total of 81 children in 4 first grade classes, subjects were randomly assigned to one of 3 treatment groups in a study by Hops and Cobb (221) to compare the effects of academic survival skills training with a direct instruction approach on reading achievement. Two classes received training in the contingent reinforcement of group survival skills (GSS), and one class was given specific instruction with a programed individualized approach (DI). Controls were used when one class was not given any special instruction. All experimental treatments occurred in the regular classroom setting. Subjects in all classrooms were observed for purposes to assess survival skill behavior. Also the subjects were tested before and after 6 weeks experimental treatment on the *Gates-MacGinitie Readiness Test* and on the *Gates MacGinitie Primary A* as dependent measures. Both GSS and DI approaches resulted in improved reading achievement when compared with the control group, but only the specific survival skill training increased the proportion of children's survival skill behaviors.

An individualized reading program was studied by Hill and Methot (211) as a transition program for 18 first graders who were taught beginning reading through a structured programed approach. Subjects were treated in 2 groups of 9 pupils, one designated as good readers and the other as poor readers. After 7 months in the BRL Sullivan Reading Program, each group participated for 6 weeks in an individualized reading program with attention to sustained silent reading, one-to-one conferences, independent followup writing, and personal attitudes towards reading. Pretest and post test data were collected from performances on the *Botel Achievement Tests, Word Recognition*. Also evaluated was the number of books read by each subject. All subjects except one made gains in word recognition during the experimental period, although no test of significance was made. According to number of books read, the good readers read more books than the poor readers, who also had more trouble writing about their books.

Oral language growth was analyzed by Stauffer and Pikulski (479) in 50 first graders who were taught to read using a language experience approach. Analysis of oral language was made on the basis of dictated stories as recorded in the notebooks of the subjects. For purposes of comparisons, notebooks were divided into 2 groups; those dictated between September and the end of January and those dictated between the first of February and the end of the school year. A variety of criteria was used for the analysis: average number of words per dictation, average number of sentences, average number of pronouns, and average number of different words. Results revealed that significant improvement was found over the 4-month period for all mean comparisons on 9 language variables through analysis of variance. Also found was a total of 3,331 different words used by the subjects in their dictated stories.

Two second grade and 2 third grade innercity classes were used by Schneeberg and Mattleman (435) in the evaluation of the Listen-Read Project. The aim of the study was to determine the improvement of reading for the subjects as a result of a coordinated use of books and tapes in addition to the regular reading program. The project consisted of 50 cassette tapes used at listening centers with related reading and language activities. A random sample of the students from each class disclosed statistically significant gains from pretest to post test scores on both group informal reading inventories and phonic inventories. Scores on the *California Achievement Test* were also significantly different on mean comparisons for 3 of the 4 classes. Data from teachers' logs pointed out that subjects became more adept at handling books, increased their attention spans in reading, and attained greater facility in oral reading.

Visual and auditory training with the cloze procedure was evaluated by Kennedy and Weener (258) to determine the impact of the training on reading and listening comprehension. The study used 4 groups of 20 third graders who were below average in reading. Two experimental groups were trained individually with the cloze procedure, using visual and auditory modes of presentation respectively. One control group received an individualized oral reading program and the other control group remained in the regular classroom. The effects of the training were measured with the reading and listening comprehension subtests of the *Durrell Listening-Reading Series* and 2 cloze procedure post tests—one presented orally and the other visually. The visual training produced significant group effects in listening and reading comprehension as measured by the Durrell and cloze procedure post tests. The auditory training group showed significant effects on the Durrell listening comprehension test and on both cloze post tests. There was also a significant interaction effect resulting from the visual training group scoring higher on the reading comprehension than on the listening comprehension subtest and from the auditory training group scoring higher on the listening comprehension subtest than on the reading comprehension subtest.

Modality aptitude and word recognition were examined by Vandever and Neville (511) in an experiment involving 282 second graders. The purpose of the experiment was to ascertain the effectiveness of matching modality aptitude of learners to their growth in word recognition. Subjects were assigned to treatment classes according to their modality strengths as well as their weaknesses for learning new words. Modality aptitude was determined by results from presenting each subject with 3 sample lessons of 12 words each, according to visual, auditory, or kinesthetic approaches. Each class met once a day for 25 minutes, 4 days a week, for 6 weeks. Pretesting and weekly testing were conducted and results were treated in a 3-way univariate fixed effects analysis of covariance. According to adjusted mean score comparisons by treatment classes, no significant differences were found among the visual, auditory, and kinesthetic treatment classes in the number of words learned. Also, no differences in mean performances were significant between those taught to their strength and those taught to their weakness.

The effect of visual memory training on visual discrimination and reading ability was investigated by Whisler (534) in a study of 295 from 12 regular first grade classes. Six classes of 152 pupils formed the experimental group, and 6 classes of 143 pupils formed the control group. Pretest data—including visual discrimination—were secured on all subjects on the *McHugh-McFarland Reading Readiness Test*. For 15 weeks, the experimentals received an author-constructed program on visual memory that was organized into 75 15-minute daily lessons in addition to the basal reader program. Twelve different formats of visual-memory tasks were used. These incorporated letters and words into the visual-memory program. During the treatment period, the controls received only basal reader instruction with no emphasis on visual memory. After completion of the visual-memory lessons, both groups were administered *Durrell Visual Discrimination of Word Test* and the *Stanford Achievement Test, Reading Test, Primary I* (SAT), as post measures. All statistical data were treated using procedures from the analysis of covariance. It was found that the experimentals made significantly greater gains on visual discrimination and SAT Word Reading measures than did the controls, but no differences were significant for SAT Paragraph Reading.

The effectiveness of listening as a learning mode was compared to reading in an experiment by Swalm (486), using a sample of 216 students in grades 2 through 4. Subjects were randomly assigned according to reading levels to 2 treatments for each grade. Thus each treatment had an equal number of pupils with above-average, average, and below-average reading abilities. The reading treatment consisted of subjects silently reading stories of known readability and then performing on cloze tests to measure comprehension acquisition. The listening treatment consisted of subjects listening through tape recorders to stories of known readability and then taking a cloze test that was played on tape and making responses into the recorders. Comparisons of the data were done through analysis of variance technique. When all subjects were considered together, no significant differences were found between mean cloze scores on the 2 learning modes for all 3 grade levels. However, when scores were analyzed by subjects according to reading levels, above-average readers in all 3 grades achieved significantly higher comprehension scores in reading than in listening. The reverse finding was discovered for the below-average readers, who scored significantly higher on comprehension through the listening mode than on comprehension through the reading mode of learning. No significant difference was noted between mean cloze scores for the average readers in listening and reading.

A program designed to reduce negative racial attitudes among 20 white first graders was evaluated by Yancey and Singh (554) in a controlled experiment. The program consisted of presentation of children's ethnic literature in combination with numerous language arts activities depicting the color black in a favorable manner. A first grade class of 21 children constituted a control group. Both experimentals and controls were administered Series A of the *Preschool Racial Attitude Measure* (PRAM) individually. It consisted of 18 color photographs, producing 12 response opportunities which indicated racial biases. Although the experimental and control groups were exposed to multiethnic basal readers, the experimentals were given an additional special program designed to change racial attitudes. Post test scores on Series B of PRAM indicated a significantly greater mean reduction in racial bias for the experimentals than for the controls.

The effect of musical training in early primary grades on sequencing behavior and on tasks of spatial functioning was studied by Hurwitz, Wolff, Bortnick, and Kokas (227). Also examined was the effect of music training on academic achievement, including reading ability. Subjects were 20 experimental first graders from a middle-class suburban school and a matched group of controls. The experimental treatment consisted of teaching children folk songs with stress on rhythmic and melodic units involving sensory and motor modalities. The music program was first developed in Hungary and is called the Kodaly method. It was taught to experimentals 5 days a week for approximately 40 minutes per session during a 7-month period; the controls did not receive music training. Results were based on comparison of scores on a variety of measures on sequencing skills and spatial abilities; these included the *Metropolitan Achievement Test*. Superiority of performance was found on 4 out of the 5 measures of spatial tasks and on 3 of the 5 sensorimotor tapping tasks in favor of the experimentals. Similar findings favored the experimentals with a reading percentile score of 87.9 and for the control group, 72.3. The difference was significant at the .01 level.

An experimental group of 24 second graders was used in a study by Lloyd and Cobbs (293) to evaluate the effects of an extended language experience approach in the teaching of primary reading. The new approach called *Picture-Vocabulary-Story* (P-V-S) consists of a file folder on which words are printed on a series of matching word cards. On the reverse side of the word cards are picture segments that form a completed picture when the matching task is completed successfully by placing all word cards over corresponding words on the folder. The completed picture then serves as a stimulus for a written or oral language experience. The P-V-S treatment involved the use of 24 activity folders as experimental material twice a week for 12 weeks with groups of 4 pupils each. Pupils in the control group had no special activities. Different forms of the *Gates-MacGinitie Reading Test* were administered to the experimentals and controls as the pretest and post test measures. Comparison of mean scores on subtests of Vocabulary and Comprehension did not produce significant differences, although higher scores favored the treatment group.

Findings from a series of studies were reported by Smith and Morgan (465) on the use of cassette tape recording as a supplementary approach to the teaching of reading in the primary grades. The complementary program consists of cassette tapes made by individual pupils in a classroom on topics of personal interests. Typed copies are produced from the recordings and become part of a child's personalized reader. This program was called Communication Skills Through Authorship. Experimental and control classes were employed in 3 doctoral studies to compare the reading performance of experimentals who experienced cassette recordings with the performance of controls who did not have this experience. The comparison was made at first and second grade levels during different school years. Both the control and experimental groups continued to use the basal series during the experimental years. *Metropolitan Readiness Test* scores and reading scores on the *Stanford Achievement Test* were compared over a 3-year period. Results from the 3 studies favored the experimentals. Of interest was the finding that 95 per cent of all experimentals could read everything they had dictated. However, when the implementation of the cassette program in 45 classrooms in one district were compared with controls in another district the results were not sustained for the experimental program.

The relationship between beginning reading instruction and patterns of miscues was investigated by DeLawter (104) in a study of 129 second graders from low-income families in New York City. Miscue patterns were compared between subjects who were taught reading with an emphasis on decoding and subjects who were taught reading with an emphasis on meaning after 2 years of instruction. Data were secured and compared for the decoding group and meaning group on non-word and real word miscues of words presented in isolation as well as in context. Each child was tested for about 15 minutes on either the isolation or context presentation. Per cent of miscues were also compared in the study according to quality of decoding by the 2 instructional groups. Miscues were classified as substitutions or omissions. Findings showed that non-word and real word miscues were made by children from both instructional groups resulting in different patterns of miscues. About twice as many non-words as words were given by the decoding group, but the meaning group had a higher per cent of real word miscues than non-words. Based on evaluating both groups on quality of decoding attempts, pupils who were taught in a heavy decoding program demonstrated a better performance in the use of graphophonic elements and syllabication in decoding the test words than did the meaning group.

Mazurkiewicz (319) compared achievement ratings of 1,963 i.t.a.- and T.O.-taught students at the end of tenth grade. Scores were compared on measures of reading, language arts, spelling, and other related skills. Subjects were 282 i.t.a.- and 591 T.O.-taught children from an original first grade population of 454 i.t.a. and 947 T.O. children. Test data were obtained from performances on the *SRA Assessment Survey Skills Profile* and were treated by analysis of covariance procedures on adjusted means of the dependent variables. Results indicated no significant differences on mean comparisons between the 2 groups on 16 achievement variables, although most differences favored the i.t.a. group with one subtest—Spelling—approaching .05 significance. Also compared were responses to a questionnaire administered to subjects when they were in the eleventh grade. Little differences were found on attitude scales for the 2 groups concerning their interests towards reading, time spent reading, and attitudes about beginning reading.

Frelow, Charry, and Freilich (154) investigated the academic and behavioral progress of second and third grade pupils who had scored in the lowest quartile (Q_1) on standardized achievement tests in reading and math before teaching assistants had been placed in their classrooms. The *Metropolitan Achievement Test* (MAT) was administered to all pupils in grades 1 through 4 in the Greenburgh, New York, Central School District. An assessment of academic progress of the lowest quartile pupils in classes with and without teaching assistants was then made through a comparison of first year and subsequent year scores. Behavioral aspects of the group were obtained through use of the scale, "A Profile of Children's Behavioral Change." Level of expected growth was determined by the average increase that the Q_1 groups had achieved in reading and mathematics from tests administered the previous year—determined to be .5 or 5 months. Significant mean differences for the 66 second and 50 third graders included in the study were analyzed by the *t*-test. Correction was based on subtracting expectancy level from the mean difference and dividing by standard error. With corrected statistics, lower quartile second grade pupils made significant gains in both reading and mathematics, while third graders improved significantly beyond expectancy in reading. Third graders' mathematics gains were less than the expected growth of 5 months but were, nevertheless, significant beyond the .001 level. On the 6-point scale of behavior change for each of 12 dimensions, teachers and aides rated the majority of children as exhibiting no social/emotional problems. Relatively more children were identified as having behavioral problems on the scale dimensions of Independence and Follows Directions. No significant correlation was found to exist between behavior and achievement.

V-6 Teaching reading—grades 4 to 8

Written and audio modes in learning science concepts were compared by Kroll (271) to determine their relative effectiveness for use by intermediate grade children. Also examined in the study was the relationship between mode of learning and the aptitudes of students. Selected at random as subjects were 120 children from 3 middleclass elementary schools located in 2 school districts in Los Angeles. Scores on the *Stanford Achievement Test* were used to classify subjects as either high-ability readers or low-ability readers. Subjects were then assigned to one of 4 treatments; each group was composed of 30 subjects. Thus the experimental pattern was a 2-mode factorial design—reading and listening—by 2 reading ability high and low—with treatment-by-levels. The learning material for the experiment was adapted from selected parts of *How Scientists Think and Work* (Learning Incorporated 1964) to written and audio conditions. Questions were also included for each selection to stimulate thinking about what the subjects read or heard. No time limits were imposed for the treatment sessions, but the average time taken for both modes was approximately 30 minutes. Each subject was able to reread or "relisten" the learning material as often as he desired in the experiment. Criterion tests were used to measure the effects, and the tests were presented in both modes for all subjects. Experimental findings showed that the variance of criterion test scores due to the effect of mode (written or audio) or due to interaction between mode and levels of reading ability was not statistically significant. Thus high-ability readers learned as much by listening as they did by reading, and low-ability readers seemingly did not learn as much by listening or by reading as did the high-ability readers. Criterion test scores and mental age ratings were found to correlate more highly for the 2 groups that were given the written treatment than for the 2 groups that were given the audio treatment. The difference between correlations was significant statistically. With reading ability as an aptitude variable, the study did not predict performance of subjects on the learning task when the treatments interacted with the aptitude variable.

Investigated by Duff and Swick (121) was the impact of pupil tutoring on the achievement scores and self concept scores of a total of 30 tutored, first and second grade underachieving children. Also examined was the effect of the tutorial experience on the achievement and self concept scores of a total of 30 third and fourth grade underachieving tutors. From among participants in a summer school program conducted in a Midwestern city, subjects were randomly designated as either experimentals or controls. In the program, the tutors received intensive training consisting of five 30- to 40-minute sessions. The tutors taught the tutees over a 6-week session in 30- to 40-minute periods for a total of 30 sessions. Instructional emphasis was given to the development of reading skills and to enhancement activities. The *Metropolitan Achievement Test*, the *More Like Me Scale for Young Children*, and the *Children's Self Descriptive Scale* were used to measure reading achievement and self concept gains among the subjects through pretesting and post testing. Data gathered were analyzed through Student's *t*-test for independent means as well as through correlation techniques. Results of the study indicated that reading achievement gains for both the tutors and tutees were significant, but the self concept gains were not judged significant. There was no evidence of a concomitant relationship between change in reading achievement and self perception change or for the reverse effect.

An experiment in intervention was reported by Bradfield, Hilliard, Palmer, Jones, Wofford, and Gray (48). An attempt was made to improve the academic and social functioning of delinquent and pre-delinquent urban minority seventh and eighth graders from a junior high school in San Francisco. Included in the experiment were a tutorial reading program, bi-weekly counseling sessions, and a variety of cultural enrichment activities. Token reinforcement in the form of money was used in the reading and counseling component of the experiment. After a one- and 2-year evaluation period, results showed improvement in the behavior of the subjects as noted in increased accuracy and comprehension scores on the *Gilmore Oral Reading Test*, in a decrease in juvenile probationary status, and in increased satisfactory evaluations by school teachers and counselors for most project participants.

Project Praise was described by Cohen (82) as a school program involving volunteer parents, teachers, and guidance workers to help serious problem readers in grades 6 through 9. About 900 students participated, and a similar group acted as controls. The chief focus of the school was the improvement of reading for the participants who were at least 2 years below grade level in reading. Each grade of 100 children was taught by a team of 5 teachers for science, social studies, mathematics, language arts, and others. The program evaluation showed a higher per cent of students in Project Praise made the Honor Roll than did the controls. Based on individual academic improvement over a 5-month period, project participants also achieved higher gain scores than did the controls.

The impact of direct vocabulary instruction on improving comprehension test results was investigated by Tuinman and Brady (506). The study involved 210 middle school students as subjects. The Comprehension subtest of the *California Achievement Test* was used for the comprehension measure. Selection of words for vocabulary teaching included all words found in the test to be unknown or difficult in meaning to the subjects. Three vocabulary tests were constructed to test the word knowledge of the subjects, and the measures were also used as pretests and post tests. Sixteen class periods of approximately 45 minutes each were used for vocabulary instruction. Results showed that scores improved on vocabulary tests from pretest to post test, but there was little if any contribution of increased word knowledge to effect any gain on the reading comprehension test.

The effects of homework assignment on classroom performances of students was evaluated by Harris and Sherman (200) in 2 experiments. Two sixth grade classes, with a total of 52 pupils, were used in the first experiment, which involved 4 different comparisons under a variety of conditions. The number of days under each condition varied from 3 to 5 days. Comparisons were made as follows: 1) homework questions versus no homework questions, 2) consequences for accurate completion of homework questions, 3) consequences for accurate completion of homework questions versus no homework questions, and 4) consequences for winning the tic-tac-toe game, with and without homework questions. Homework consisted of sentence completion items to be answered from reading a given social studies text. During the social studies period at school, subjects were examined by having them write one-word answers to questions within the context of a tic-tac-toe game. The game activity was held the day after a homework assignment. Performance on the tic-tac-toe game was used as the criterion measure of student achievement. In general, the findings of the first experiment disclosed that students who completed the homework and met 80 per cent accuracy criterion also answered 87 per cent of the questions in class. Students who did not meet the 80 per cent accuracy criterion on the homework assignment or did not hand in the assignment answered only 31 per cent of the questions correctly. The second experiment involved 25 sixth graders and concerned an effort to enhance performance in mathematics through homework.

V-7 Teaching reading—high school

Instructional objectives as directions to learners were explored by Kaplan and Rothkopf (251) in 2 related experiments to assess the effect of passage length and amount of objective-relevant content. Passages used in the first experiment were selected from 3 instructional textbooks prepared by the Systems Training Department, Bell Telephone Laboratories. Passage length varied to form 8 experimental texts. Two types of objectives were prepared. First, a set of specifically phrased objectives was written for each passage length. Second, a match set of generally phrased objectives was developed for each length. Performance was measured on completion-type test questions with substantive words deleted from an approximate paraphrasing of passage sentences. Eighteen high school subjects were assigned to each of 24 treatments. A total of 54 subjects comprised 3 reference groups, one for each passage length. The experimental sessions were conducted in the high school cafeteria after the last school period. The second experiment sought to determine whether the decremental effects on intentional learning were due to increases in density or the absolute number of objective-relevant sentences. Examined was learning performance associated with various passage lengths when the number of objective-relevant sentences was the same for each passage length but the density was varied. The data were secured from 216 students who participated in the first experiment. The chief findings of the experiments were a) the use of objectives as directions resulted in increased performance; b) the likelihood of mastery of any objective (intentional learning) decreased with the number of objective-relevant sentences but was not related to passage length; c) incidental learning decreased with passage length; d) study time increased with the number of objectives and with passage length; and e) specifically stated objectives resulted in greater intentional learning than generally stated objectives.

Behavioral objectives in teaching poetry were used by Snider (470) to ascertain changes in cognitive understanding of and affective responses to poetry. A poetry unit based on behavioral objectives obtained from teachers and pupils through a modified Delphi survey was taught to 2 ninth grade English classes. The Solomon-Four Group Design was used with data secured through a pretest and post tests in a 2 × 2 analysis of variance. Scores were obtained on 6 test items on each cognitive and affective level. Analysis revealed that learning and response to poetry as a result of the use of behavioral objectives were significant at the .05 confidence level on every level of the cognitive and affective domains.

Changes in self concept, level of aspiration, and academic achievement of students from low income families were assessed by McCormick and Williams (324) after a concentrated summer compensatory education program. Subjects were 54 white and 98 nonwhite high school students who participated in the program Upward Bound at University of South Florida. Subjects were divided into 3 groups with no controls. Group I consisted of 65 students who completed one full academic year in the program. Group II included 43 students who were selected for the Upward Bound program. Group III consisted of 44 students who completed one academic year and one earlier summer program. All subjects participated in the experimental on-campus residential summer program. Criterion measures comprised the *Tennessee Self-Concept Scale*, *Metropolitan High School Achievement Tests* including reading, and *Worrell's Level of Aspiration Index*. All students were tested during the last week in January and in May as well as the first week in August at the end of the residential program. An analysis of variance for the 3 groups across the 3 test periods was computed for each of the criterion variables. Improvement in self concept was found for each of the test periods with the greatest increase by Group I. Analysis of data from the achievement tests indicated significant gains in the 4 areas tested including reading across the 3 test periods. Scores on the aspiration scale between January and August indicated an improved level of aspiration for the total sample in terms of being realistic.

Academic performances of students in a specialized high school and their scores on an entrance examination were investigated by Murphy (348) over a 4-year period. Three categories of 160 subjects each were examined. Two groups of regular students were admitted to the school based on passing scores on the *Science High Schools Admissions Tests* of New York City (SHAT). One group (REGS) scored at or above the cutoff point on SHAT and the other group (OPTS) scored between the cutoff point and the first quartile. The third group (TOPS) consisted of students from economically disadvantaged homes; these subjects scored below the cutoff point on SHAT but successfully completed a summer program. The program was designed for students selected by the feeder school principals as having academic potential although having below cutting scores on the SHAT. The criterion measures in the study included the *Metropolitan Achievement Test* for reading, the *New York Algebra*

Regents Examination for math, and weighted grade point average for school achievement. Comparison among mean scores for 2 groups of regular students and one group of special students showed significant differences in reading and grade point average at the .05 level in favor of the REGS group. Mean scores in algebra and grade point averages were as high or higher for the TOPS group as they were for OPTS group. Predictive relationships between scores on SHAT and scores on the 3 measures of academic performance were significant for the regularly admitted groups only.

V-8 Teaching reading—college and adult

The efficacy of 3 common study methods was explored by Hoon (220), who used 30 male freshmen within the College of Arts and Sciences at a Midwestern university. The subjects were randomly assigned to one of 3 treatment groups. One group underlined important ideas while reading; a second group took notes on what was read; and the third group read passages without either underlining or writing. Following each of 3 passages, subjects took a multiple choice quiz as the criterion measure of the relative efficacy of the 3 study methods. Prior to each quiz, subjects were given 2 minutes to review either underlined sections, notes, or reread portions of text, depending on the treatment given. For each correct response, a subject was to be rewarded by payment of 8 cents at the end of the experiment. The average amount of time subjects spent studying during Read, Read-Underline, and Read-Write-Notes treatments was 15, 19, and 26 minutes respectively. When verbal ability as measured by *Scholastic Aptitude Test*-Verbal was controlled through analysis of covariance, the adjusted mean comparisons did not produce significant differences among the 3 study method groups.

Reading requirements of jobs were reviewed by Sticht and McFann (481) to determine the different approaches used to judge the reading demands of various career fields. Two general approaches were described. The first approach was called "summary task statement" derived by a method of simply stating reading demands of particular jobs as illustrated in the Army Regulation *Enlisted Military Occupational Specialties* or in the study by the Canadian's Department of Manpower and Immigration, which was based on a questionnaire of workers and supervisors to identify specific reading tasks on the job. A second approach was called the "summary index number" method based on the use of an instrument or reading task test. In this second approach, different methods of determining an index number were identified. One method involved the construction of special job reading task tests based on materials relating to reading requirements of particular jobs. Another method was derived from readability estimates of materials used for specialized occupational fields. Still another method concerned estimates of reading demands of jobs derived from correlating scores of reading and job proficiency measures. The final method described was the single index number to describe reading demands of jobs derived from judgments of job analysts. All the methods are discussed in the report, stressing advantages and disadvantages.

Three experiments using 114 Air Force trainees as subjects were reported by Siegel, Lautman, and Burkett (453). The experiments assessed the effects of simplified textual material and tape recorded presentations on reading comprehension. Written materials from the Air Force material facilities occupational specility were used. Each of the 3 experiments had a different type of material based on either in-course study materials, home study materials, or a reference manual. The simplified written revisions and the unmodified originals were recorded on magnetic cassette tapes. Tape presentations followed the written text verbatim and were identified for simultaneous use by subjects in certain treatment groups as they read the textual material. Criterion tests were constructed in a multiple choice format to measure reading comprehension of the original and the simplified versions. Among the findings, little if any gain was found from simplification of textual materials or from the auditory supplementation to improve comprehensibility of the subjects. However, for home study course materials, lowering the readability level resulted in increased criterion test scores.

Reading skills of 268 medical students were assessed over a 3-year period by Ambrosino, Brading, and Noval (9) to determine whether deficiencies in reading ability of students were related to their academic failure in medical school. The *Nelson-Denny Reading Test* was administered to entering medical classes for each of 3 years. Raw scores were converted to percentile ranks for each student. Students with percentile ranks below 50 were studied in terms of their academic performances in medical school. It was found that certain students who had serious academic difficulties also had below average reading scores.

Varying criteria scores for successful completion of quizzes in unit-mastery-taught courses were analyzed by Carlson and Minke (68) to ascertain the effects of conditions on course performances and the final grades of 147 students. Subjects were enrolled in 3 consecutive 10-week night classes of a Survey of Psychology course at the University of Hawaii. A standard introductory test and an accompanying mastery system with related study questions were assigned to all subjects. Four quizzes were adminstered each week and were corrected immediately for student feedback. The 3 classes were distinguished by their respective criteria for mastery of each quiz. Class I had an increasing criterion for passing scores, starting from 60 per cent correct with planned increases to 90 per cent mastery. In Class II, the criterion was 80 per cent on all units, and for Class III the criterion was 90 per cent on all units. Analysis of results disclosed that Classes I and II performed better than did Class III on unit quizzes, passed units at a higher rate, and received fewer fail grades. Also, in comparison to performances of Class II, Class I attained a higher degree of accuracy on quizzes and required fewer attempts overall to master unit quizzes.

Setting goals for a reading improvement program were described by Walker (521) in a study involving 180 students with different ethnic backgrounds enrolled in communication classes at Northern Illinois University Reading Center. Subjects were treated in classes of 15 each with emphasis on reading, English, and speech in a 9-hour block. Goals in reading were developed by students and instructors following the administration and interpretation of the *Diagnostic Reading Test* and the *Brown-Carlsen Listening Comprehension Test*. Goal setting focused on areas of reading comprehension, rate, vocabulary, study skills, listening, attendance, and make-up assignments. A program was organized to promote improvement in the reading and study skills of the subjects according to established goals. Evaluation procedures were also used to guide reading behavior. A variety of reading assignments were used to provide application conditions to reinforce transfer of training. After the first year, 80 per cent of the subjects achieved a grade point average of 2.0 or better. Three years later, 94 were graduated from the university.

Familiarization of subject matter and different response modes in programed instruction were investigated by Abramson and Kagen (3) to determine their interactions on the achievement of 30 university students in learning material. The programs used in the experiment were a revised version of *Diagnosis of Myocardial Infarction* in programed instruction or in a reading format. For familiarization treatment, materials with technical vocabulary and electrocardiogram tracings were developed. Two sessions were held to collect the data; subjects were assigned randomly either to the familiarization or the non-familiarization condition as well as either to the constructed response or to the reading condition. On completion of each treatment, subjects took a post test; and one week later, they took the same post test to provide scores as critical measures of verbal and tracing learning. Analysis of scores by multiple linear regression techniques indicated that none of the main effects was consistently significant. Sex had a differential effect in favor of the males only on the post test tracing scores. Response mode and familiarization showed differential effects on the delayed post test tracing scores with the constructed response and familiarity groups scoring highest.

Reading achievement and attitudes toward reading of disadvantaged freshmen were evaluated by Rakes, Lintz, and Payton (391) in a study of a competency-based college reading improvement program. Sixty-one high risk, predominantly black students from low-income families were subjects who participated in either the experimental or traditional program. All subjects were enrolled in one of 4 sections of a reading improvement course and were pretested with the *California Reading Test*, Advanced Form W and were post tested on the same test as the criterion measure. For criterion assessment of attitude, a student attitude inventory was administered during the final week of the 8-week program. The 2 experimental classes used the same instructional materials as the 2 traditional classes except that the experimental classes used modular units in a self-directed and self-selected manner through which competency-based content was organized. Post analysis of data revealed that the experimentals made greater gains in reading achievement than did the controls and that the experimentals showed positive attitudes towards the competency-based classes and instructors.

A student-designed versus a teacher-designed vocabulary cloze test was compared by Aaronson (2) in a study of 30 students. The subjects were divided into 2 groups, and they were randomly assigned to either version of the test. The mean score for the teacher version was 7.75, and the mean score for the student version was 8.50. No statistical difference was found. Described in the report are the procedures used in the student-developed cloze vocabulary test with samples of cloze sentence constructs.

The amount of studying in a personalized instruction course was compared by Born and Davis (47) to the study time in a lecture course for students in 2 different university psychology classes. Course material was available to all students who were responsible for the content on the course examination. The lecture-course procedure involved the clarification and elaboration of important points in the text material. The personalized system of instruction procedure (PSI) required that each student pass an 8- to 10-item written test on each unit of course material and that each progress at an individual rate. Students in both the PSI and lecture classes took the same one-hour midterm and final examinations. Results disclosed that although total preparation time for both groups was the same, the PSI students scored slightly higher than the lecture students on common course exams. An analysis of the study records of individual students revealed that the PSI students showed a fairly regular pattern of study but the lecture students varied greatly in their pattern. Students in the PSI section were found to spend about 16 more hours in the study center than did students in the lecture section, but the latter group had 20 additional hours attending lectures.

Investigated by Bristol and Sloane (55) was the impact of contingency contracting on the study rate and test performance of 36 undergraduate psychology students. They were randomly assigned to one of 3 groups under different experimental conditions. The function of the contingency contracting program in producing increased study rate was evaluated by individual experiments with each student in an experimental contracting group. The overall effect of the program on test performance was assessed by comparing the final scores for an introductory psychology course earned by the experimental group with those earned by 2 matched groups as controls. A reversal procedure established that contingency contracting did significantly increase the study rate of students of a wide range of ability. However, it was selectively effective in improving the test performance of only the below-average students. Study rate gains in contracted courses did not generalize to non-contracted courses. Self-recording of study time in the absence of scheduled differential consequences did not improve test performance. Study rate under no-consequence conditions varied with test schedule. For both consequence and no-consequence groups, the correlations between study time and final score for the course were only moderate.

Effects of selected word deletions on sentence meaning were examined by Ohnmacht and Fleming (363) under 4 different context conditions, using 40 graduate students as subjects. Five types of word classes were deleted in different experimental contexts that included transitive verb, complement verb with possible direct object, complement verb without a direct object, subject noun, and object noun. Target words were presented to subjects in one of 4 contexts that included 0-deletion-12, 6-deletion-12, 12-deletion-6, and 12-deletion-0. Each subject responded to all 50 deletions—10 per word class—but under only one of 4 context conditions. Treatment of data was in a 4 × 5 factorial design. Among the findings, a strong negative effect by the 0-12 context was found on all 3 verb conditions as well as on the subject noun condition. Best results were found in 6-12 and 12-6 context conditions for simple effects on the word classes.

A paper-and-pencil group test of perceptual ability was used by Mehryar (331) on a sample of illiterate Iranian workers to determine the relationship between perceptual ability and literacy achievement. Subjects were 320 male workers, ages between 9 and 53 years, who were attending literacy classes. Used as the test of perceptual ability was the Tool Matching Scale of the *General Aptitude Test Battery*, Form B-1002B (GATB), developed by the U.S. Department of Labor. It consists of 49 items containing a stimulus drawing and 4 black and white drawings of simple shop tools. Scores on the GATB were correlated with scores on a battery of content-related achievement tests that included Dictation, Word Recognition, Arithmetic, Numerical Reasoning, and Practical Information. Coefficients ranged from .00 for Numerical Reasoning to .43 for Word Recognition. All correlations were found to be positive and significant. Test results were also compared according to 7 age groups. Results showed that the mean GATB performances of Iranian subjects reached its peak at about 18 years with a slight decline around 21 to 30 years, and a striking decline in scores after age 41.

Colleges and universities were surveyed by Huslin (228) to identify current practices of reading improvement courses at 177 institutions. Data were collected through the use of a questionnaire. A variety of findings was reported. Titles of courses varied widely with 50 different ones in all. Sixty-eight schools were found to grant academic credit for the courses, and 52 schools reported that their courses meet 3 hours weekly. Reading improvement courses were affiliated to a variety of departments with education having the highest frequency. A majority of schools used a standardized test to measure progress with 58 respondents reporting a letter-grade system of grading. The general consensus of those surveyed believed that these courses should be given on an optional basis.

A linguistic reading approach was compared to a programed reading approach by Whittaker (538) in a study of program effectiveness on the reading comprehension of 58 black freshmen at Texas Southern University. The subjects were assigned randomly as experimentals and controls from a total population of 608 students who were enrolled in reading and study skills courses. The experimental treatment was based on Robert's *Patterns of English*; the controls were taught with materials from *SRA's College Reading Program One*. Both programs sought to improve reading comprehension of the participants. Different forms of the *Nelson Denny Reading Test* were administered to all subjects as the criterion measure of vocabulary and comprehension growth in pretest and post test conditions. Comparison of mean scores disclosed that although both groups made considerable gains in reading, no significant differences were found between treatments.

A one-year study of the communication course in the General Motors Institute Pre-Engineering and Management Program was described by Patterson (368). The objective of the remedial program was to help high school graduates with academic deficiencies prepare for admission into degree programs. All students in the program were on a cooperative plan where they spent alternating 6-week periods at the school and at sponsoring plants. Among the variety of courses taught during the 2 semester program was a communication skills course on writing, reading, listening, and study skills. As one outcome of the course, pretest and post test comparisons of mean scores on the *California Reading Test* disclosed that significant gains were made on the Comprehension subtest. Also in the report were recommendations on changes in course content.

The effects of self-reinforcement during study skill sessions on study behavior was investigated by Jackson and Van Zoost (232), using 30 university students as subjects. They were assigned randomly either to control or experimental groups in a study skills program. Eight group sessions comprised the program. Participants attended a minimum of 8 hours in the study sessions plus 2 hours for pre- and post-program assessment. At the end of each session, experimentals were given the role of teaching the content of each session to a friend and to encourage each one to apply the new strategies and techniques of study. In addition, the experimentals would evaluate their own performances on a 5-point scale and reward themselves monetarily as a form of self-reinforcement. Controls were not involved in a teaching role but were given a lump sum of money at the end of the program. Criterion measures included the *Survey of Study Habits and Attitudes*, the *Suinn Test Anxiety Scale*, and an experimental *Study Skills Inventory*. Analysis of variance of scores on the 2 self-report study habit inventories showed that all subjects reported improved study habits at the end of the program, with greater gains for the experimentals than for the controls. Both groups showed a significant reduction in scores on the anxiety scale.

The effect of note taking, types of notes taken, and review of recall was studied by Fisher and Harris (147), using 112 college students as subjects. They were assigned to 4 experimental conditions to include Detailed notes, Notes on main points, No notes—review lecturer's notes, and No notes—mental review. Information concerning the various treatment approaches were described in mimeographed booklets for use by the subjects. Included also were 2 forms of an 18-item multiple choice test as a criterion measure. Form A was taken immediately following a 20-minute lecture, and then Form B was given after a 10-minute review under experimental conditions. Based on analysis of variance of scores, no treatment effects were found between those assigned to take different types of notes. A test of significance on gains between scores on Form A to Form B indicated that the review did not improve performance significantly for the subjects.

V-9 Teaching materials

Workbooks designed for speed reading training were evaluated by Kamm, Otto, and Dulin (250) to assess selection difficulty, guessability of answers to questions, and reading purposes of the material. For the investigation, the *Time-Life Speed Reading System Drill Book* was examined, and 22 students at the University of Wisconsin at Madison were subjects in the reading and testing conditions. Regarding guessability of workbook selections, the results showed that the mean correct responses ranged from 4.3 to 7.6 out of 10 in comparison with the chance score of 2.5. Among the 22 selections examined, all appeared to have equal difficulty. When questions used in workbook selections were classified according to purposes, the number of inferential type questions per article ranged from one to 5 with an average of 3 and a half, and the remaining usual 6 or 7 questions were found to relate to questions of factual recall.

The *Functional Basic Word List* (FBWL) was used in a validation study by Ramanauskas and Kahn (392) that involved 137 educable mentally retarded children with a mean IQ of 68. Only the preprimer, primer, and first grade words on the FBWL were used. Subjects were enrolled in 9 different intermediate, junior high, and senior high public school special classes. To validate the FBWL, each subject read aloud all the words in the first 3 grade levels of the FBWL under individual testing conditions. Results indicated that sex, school level, and word list grade level—as well as the interactions of these factors—affected the student's readability, thus suggesting that the relative readability of the words at the designated graded levels was experimentally validated.

A core vocabulary of 1,000 words was rated for imagery in a study by van der Veur (509). The list of words was developed from oral vocabularies of children. Words were then rated as high imagery when they aroused a mental image very quickly. Words that aroused a mental image with difficulty or not at all were given a low imagery rating. Each word was rated on a 7-point scale by 32 university students. To judge the usefulness of the imagery rating, the investigator used sixty three 5-7 year olds as subjects in an experiment. The subjects were taught to recognize 756 of these words. Each subject received a different set of 12 words, but all received 4 words rated high in imagery, 4 rated medium, and 4 rated low. All words taught were unfamiliar to the subjects. The mean number of words identified correctly for high, medium, and low words were 2.76, 2.40, and 1.83 respectively after a total of 5 learning trials. Results indicated that the imagery rating of words and the subjects' ability to learn these words was related significantly beyond .01 by a binomial test.

The relationship between Flesch and Gunning readability indices was reported by Blumenfeld and Justice (41). Fifty random reading samples were used by the same rater to produce Flesch and Gunning indices of readability. The product-moment correlations between the readability ratings of the 2 measures ranged from .92 to .98 with a median of .96 on the 6 samples.

The interrater reliability of the Gunning readability index was investigated by Blumenfeld, Black, and Morris (40). Using the Gunning procedure, 2 raters independently scored the readability of the same 20 sentences of a document. The product-moment correlation between the 2 readability ratings was .77, and a comparison of mean rating scores of the 2 raters was not found to be significantly different.

The readability ratings of selected vocational materials were determined by McBrien (321). Evaluated were career and occupational literature from government and commercial publishers, for a total of 12 selections. Variables considered in the readability calculations were word frequency, sentence length, pronoun frequency, and ratio of syllables to sentences. It was found that 7 of the 12 sources were rated at the college level of reading difficulty. The specific title of the source did not suggest how difficult or easy the readability level of the vocational literature was.

The first 110 words of the 1944 Thorndike and Lorge Word Count as ranked in an earlier study was compared by Dinnan (112) to the ranking of the first 110 words from the 1971 *American Heritage Word Frequency Book*. An analysis of rank order of the words from both sources did not produce any significant differences in numerical frequency of the 2 lists.

A computer readability formula designed for machine scoring was tested by Coleman and Lian (85) to explore the feasibility for measuring readability mechanically with an optical scanner. From original data on known readability of 36 passages as determined in another study, the new prediction equation was applied with letters per 100 words and sentences per 100 words as the predictors. The multiple R of this formula was .92 indicating that these 2 predictors accounted for 85.11 per cent of the variance among the 36 known readability scores.

Readability of high school biology materials was estimated by Daugs and Daugs (96) with the application of cloze procedure and transformational grammar analysis. Passages totaling 713 words were selected from the first half of the Biological Science Curriculum Study, *Biological Science, Molecules to Man*. Five cloze procedure tests were developed by deleting every first, second, third, fourth, or fifth word for each of the 5 forms of the texts respectively. The mean difficulty for the 5 forms was calculated to be 43.9 per cent. An analysis through transformational grammar was made on 2 paragraphs of the cloze test in addition to determining the difficulty of science and non-science words to passage difficulty. Data were secured from results on word lists in testing word recognition and word meanings of selected students. Included also was a statistical treatment of sentence difficulty through regression analysis technique with mean sentence difficulty as criterion. Findings showed that neither very difficult science nor non-science vocabulary contributed significantly to sentence difficulty. Word recognition and definition of selected vocabulary with tested population sample indicated that difficult science words did not contribute significantly to the difficulty of sentences. Reading difficulty was not significantly related to the number of deep structures sentences. Reading difficulty increased with the use of infinitives and with the use of words that tend to be abstract. Less difficulty was found with the use of the active voice than with the use of the passive voice.

The 473 technical words and terms used in mathematics textbooks were compared by Willmon (543) to the Thorndike-Lorge (T/L) 500 and 1,000 Word Lists and to the Revised Core Vocabulary (CV), a list of words introduced in basal readers. Seven classes of math terms that were identified were based on frequency of use and were compared to the T/L and CV word lists. The per cent of those math words and terms appearing on the lists was calculated. Results disclosed that the total per cent of technical terms not appearing on the T/L 500, T/L 1,000, and CV word lists were 84, 69, and 54 respectively. In all cases, the per cents of the total number of words not found on the 3 lists were significantly larger than the mean of the individual per cents.

The suitability of social science and science textbooks was examined by Miller and French (338), using the cloze procedure as a measure of readability. A sample of 250 high school seniors were selected from 2 city schools in the South. Subjects were administered the *California Reading Test*, 1970 edition, Level 5 (CRT) and author-constructed cloze test batteries from social science and science textbook materials. The 2 test batteries were developed from selected passages taken from Mississippi State adopted textbooks for grades 6, 8, 10, and 12. Passages were randomly selected from the front, middle, and end sections. Three selected passages formed a cloze reading exercise for each grade level. One level and one deletion pattern by either 5th, 7th, or 10th word was completed by each of the subjects. A 2 × 4× 3 analysis of variance was used in the social science and science treatments. Also inter-cell variances were examined. According to the test results, social science material was found to be more easily read than was the science material. Grade level comparisons disclosed differences at significant inter-cell variance. The subjects read the social studies texts equally well regardless of the deletion pattern of 5, 7, or 10 words. However, only the 7-word deletion pattern in science material was judged satisfactory in terms of gaining adequate information. Correlations between CRT and Cloze scores ranged from −.05 to .93 with every 10th word deletion pattern producing consistently high correlations in both social studies and science cloze tests.

The vocabulary of first grade readers in 1970 editions of selected basal reader programs was analyzed by Rodenborn and

Washburn (410) to identify current vocabulary developments in terms of load, frequency, and commonality. Examined were vocabulary load comparisons of 1960 series with 1970 series of the Ginn, Houghton Mifflin, Macmillan, and Scott-Foresman series. A marked increase in the total number of words was found in the 1970 first grade programs, with a low increase of 89 words in the Macmillan program for a new total of 324 to a high increase of 340 words in the Scott-Foresman program for a new total of 675. Changes in frequency of occurrence of words were noted with less repetition of words in new programs. In one book of 240 new words, 85 words were used only once. A study of vocabulary commonality of 6 current series disclosed relatively less commonality and greater variations than those in earlier series. A core vocabulary of 134 words were found to be common among the 6 new basal readers for first grade programs. Implications of these changes were also reported.

Sex-role stereotypes in children's stories were identified by Taylor (492) from the state adopted basal readers used in the first 6 grades in schools in California. It was pointed out that at least 75 per cent of the main characters in the textbook stories were males. Often stories about males did not include a female, but stories about females included males with whom the females interact. In sum, it was reported that on the one hand, males were pictured typically as dominant, creative, explorative, undaunted in the face of difficulties, and successful in many endeavors. On the other hand, females were depicted as submissive and uncreative, with a tendency to withdraw in the face of difficulty and to have limited success in only a few activities.

Poetry in second grade readers from 11 different reading series was examined by Rudie (422) to evaluate both the quantity and quality of poetry used. Among the series examined, 3 contained no poetry but recommended that the teacher provide appropriate poetry experiences from other sources. The 3 series included *Language Experiences in Reading, The Palo Alto Reading Program*, and *Phonetic Keys to Reading*. The other 7 series provided at least a minimum of one or 2 poems a unit. The poems were judged as fortunately chosen and attractively illustrated.

A Dolch list of 95 common nouns was compared by Johns (239) to 4 recently published word lists. Compared were the first 500 from the *American Heritage Intermediate* corpus, the 188 *Durr's List* of high frequency words in trade books, the first 500 from the *Kucera-Francis List*, and the 727 words from the *Murphy Analysis* of the oral vocabularies of primary children. The comparisons revealed that there were 20 nouns common to all 4 of the word lists and 26 others common to at least 3 of the word lists. When compared to the Dolch's 95 nouns, 30 of these 46 nouns were common. In addition, the comparison disclosed that 16 nouns common to at least 3 of the recently published lists were not listed by Dolch.

The first 150 words from the Dolch list were ranked in a comparison by Lowe and Follman (296) to words ranked in 4 other popular word lists. Considered for comparisons were the Carroll corpus from *Word Frequency Book*, Johnson's *Basic Vocabulary for Beginning Reading*, the *Kucera and Francis Word List*, and Otto and Chester's *Sight Words for Beginning Readers*. Spearman's *rho* was computed between all pairs of word lists to determine the amount of agreement between each pair of word lists. Kendall's *W* was computed among all 5 word lists to determine the commonality across all 5. Word rankings on the lists intercorrelated highly, ranging from .81 to .99, with all correlations significant beyond the .001 level. Kendall's *W* was .90 and significant beyond the .001 level. In sum, the most common words compared on all the lists were judged essentially the same. Also included in the study was a comparison of the words from the Dolch list with grade placement ratings from total word counts of selected basal readers.

The *Dolch 220* was administered to a total of 334 second and third graders in a study by Froese (158) to compare the results to scores on the *Botel Word Opposites Test* given 5 months later. Subjects were enrolled in 4 schools of a large suburban school division in Winnipeg, Canada. Factors considered in the study were grade level, IQ level, socioeconomic level, and sex according to performances on the Dolch 220 and on the Kucera/Francis 220 highest frequency words. Mean comparisons of words identified correctly on both word lists disclosed significant differences at the .05 level between tests, between grades, and among IQ levels on the Dolch test. On the Kucera/Francis 220, only the difference between middle and lower IQ's was significant. The difference between socioeconomic levels and sexes did not reach significance. The correlation between scores on the Dolch 220 and on the Botel was greater than the correlation between Kucera/Francis scores and Botel scores at both second and third grade levels.

Computer-assisted readability levels were determined by Moe and Arnold (341) on 25 Newbery books. Three samples from each of the Newbery books, copyrighted 1948-1972 were key punched for computer analysis. Two computer programs developed at Purdue University were used in determining the readability estimates with the use of the Lorge formula and the Fry method. With three 500-word samples taken from each of the 25 books, a total of 75 readability estimates were calculated. The Lorge formula yielded readability estimates ranging 3 years, from 4.7 to 7.7. The median estimate of the 75 samples was 6.0. The Fry method yielded readability estimates ranging 7 years, from 2.7 to 9.7. The median estimate of the 75 samples was 6.2. Both formulas yielded consistent results for each book; however, a greater variability was found with the Fry method.

Predictive values of readability formulas derived from a cloze procedure and a multiple choice technique were compared by Miller (335). The cloze measure was represented by the Coleman No. 4 formula. It is a multiple-regression readability formula derived from a cloze reading comprehension test relating to passages and scores from the 1967 Miller-Coleman Readability Scale. The multiple choice-derived readability formula was represented by the Flesch Reading Ease formula. The cross-validation criterion tests used were the 1961 McCall-Crabbs *Standard Test Lessons in Reading* and the 1969 *Bormuth Reading Comprehension Test*. The application of the formulas to each criterion passage was made through computerized versions to calculate the readability scores. The correlations of Flesch formula scores with criterion scores were .750 on the Bormuth test and .640 on McCall-Crabbs. The correlations of Coleman No. 4 formula scores with criterion scores were .720 on Bormuth Test and .520 on McCall-Crabbs. Comparison of validity coefficients of the Flesch and Coleman formulas was not significant on the Bormuth cloze criterion but was significant on the McCall-Crabbs multiple choice criterion in favor of the Flesch formula.

A federal Title III project provided funds for use as incentive pay to teachers through performance contracting in a program described by Quarles (387) The aim of the project was to raise reading achievement among 420 target pupils who were reading below expectations. The Bristol, Virginia, program comprised the major components of the Right to Read Project with provisions for pay bonuses for teachers. The bonuses were scaled according to reading achievement gains over gain expectations of subjects taught. In reading centers, 6 reading specialists participated in the program, each one serving approximately 60 pupils in grades 1 to 8. Reading performances of subjects were measured on a set of criterion-referenced tests and a set of standardized achievement tests. The measured gains of most subjects in the first year were reported as 20 to 180 per cent over expected gains. Teacher bonuses ranged from a minimum of over $770 to a high of $1,800. The second year program produced an average bonus pay rate of $1,755.

A total of 25 readers for grades 1-3 were analyzed by Lutz (301) to identify the types of syntactic forms used in 10 different basal series. From analysis of sentence structure in the texts, some 12,000 sentences were found. Of these, 593 were questions, 569 were negations, 58 were passives, and 32 were of the conditional construction. It was judged that over 10,000 sentences were simple, active, declarative sentences.

A description of a comprehensive reading program was made by Kendall (257) from a combination of published reading materials in England. The program was designed on the assumption that no single available reading scheme alone provides sufficient material in the depth or variety necessary to effect the acquisition of reading skills by the normal child. A sequence of 26 readers compiled from the *Janet and John* series, the *McKee Readers*, and *Ladybird* series, was identified. All 3 series are English. The sequence was further dividied into 4 stages of development. Also described were sequence and types of supplementary reading books for the less able reader drawn from another 8 reading schemes. The report presents an analysis of vocabularies, showing the sight phonic words for each book and the number of revision words which, together, gave the total vocabulary of each book within the comprehensive program.

Textbooks in vocational courses were rated by Harris (199) with the use of *Fry's Graph for Estimating Readability*. Derived readability estimates were compared to ratings by publishers for 14 vocational books that were annotated by the author. Books examined were categorized as automotive, metalworking, general business, retail, and marketing. Differences were found between readability ratings and publishers' ratings.

A composite vocabulary list of 2,025 words as a random sample of sight words was obtained by Dzama (125) from 225 first graders for use in a study of the utility of phonic generalizations. Each word was recorded for phonetic respelling and syllabic division. Results were then compared against each generalization to determine conformity and non-conformity, including per cent of utility. When a given generalization was found to contain 20 exemplars and a utility of less than 75 per cent, the criteria of utility was acceptable. The sight vocabulary was also analyzed on the basis of high and low frequency words. Chi-square statistics were applied to the frequency data to determine the significance of the observed frequencies of conformity from the expected frequencies to the 45 phonic generalizations. These generalizations were first identified in a 1963 study. Further analysis consisted of correlation computations for utility scores for vowels and for consonant and syllabication generalizations; and these were tested for differences. Findings revealed that 20 of the 45 phonic generalizations met the criteria of utility in the sight vocabulary sample. Comparisons of high and low frequency words disclosed that only 8 phonic generalizations were mutually useful. Only one additional phonic generalization was found to be useful for high frequency words, while 10 more phonic generalizations were found to be useful for low frequency words.

A computerized algorithm for reading was described in a progress report by Leton (282) on a research application of a computer process called *Simuread.* The algorithm is deterministic rather than heuristic. The computer simulation of orthography consisted of holes in data cards to represent the letters of the alphabet, punctuations, numerals, and other logographs. They were vinary coded. The output was in terms of numeric representation of prespecified phoneme values. A variation of the Trager and Smith phoneme system was used to classify the phonemes into various categories for research purposes. Samples were presented in graphic form of Simuread processing, including Dale's list of 769 easy words as well as selections from first grade readers of 2 different series.

DISTAR was evaluated in a survey by Ogletree and Dipasalegne (362). The survey involved 21 primary innercity teachers of Chicago. A questionnaire was used with 33 items relating to areas of program effectiveness, revisions needed, and pupils' reaction to the program. Findings disclosed that although most teachers reported favorable responses to the program, 24 per cent believed DISTAR was effective for all children, and only 16 per cent thought DISTAR to be effective in teaching the basic skills in reading. Also, 85 per cent of the teachers modified the program in one form or another. Many teachers—75 per cent—thought the children were bored with the program. Other detailed findings were reported, including several recommendations in program changes and uses.

The Dale-Chall readability ratings for sixth grade science textbook materials were compared by Froese (159) to an independent criterion of language difficulty of these materials as tested by a cloze method. A sample population of 366 subjects was randomly selected from approximately one-half of the sixth grades from a district in

British Columbia. Both intelligence and basic skills tests that were administered produced a mean IQ of 102 and a mean reading grade of 6.15 for the sample. Test data were correlated with scores from the 2 readability measures to ascertain reliability and validity coefficients. The findings favored the cloze technique as a measure of readability of sixth grade science textbook materials. Among the findings, the 12 cloze passages yielded a mean reliability coefficient of .79 with a range of .64 to .89. Also, the cloze scores correlated from .55 to .85 with intelligence scores on the Canadian Lorge-Throndike test and from .52 to .85 with comprehension scores on the *Canadian Test of Basic Skills.*

The readability of 8 multivolume encyclopedias was evaluated in an investigation by Dohrman (113) to judge the suitability of these reference books for use in social studies by intermediate grade pupils. The encyclopedias examined were considered the best quality materials by the American Library Association. Seventy-five social studies articles from the 8 sets of encyclopedias were selected according to grade level topics for readability sampling. These topics, 25 each for grades 4, 5, and 6, represented a year's unit of social studies according to the listing of a general national program pattern. The readability techniques applied in the study were the unrevised Dale-Chall formula and the Fry readability graph. A total of 1,200 scores was obtained and sorted as to the reading suitability of the encyclopedias in the light of the grade level ranges in reading for each of the intermediate grades. The spans of reading levels were determined by a probability curve to derive 6 categories of readers from high to readiness levels. According to comparison data between readability scores and grade ranges of reading levels, 794 scores—or 66 per cent of the reading matter—were judged as having readability levels above the grades to which the encyclopedia articles would normally be assigned. The remaining 406 scores—or 34 per cent of the articles—indicated suitable readability for the grades. Grade by grade comparisons showed that fourth graders would likely have the greatest problem in reading articles in the encyclopedias as reference sources: Only 5 per cent of the articles were found in the appropriate range of readability.

V-10 Teaching—grouping

Open-area education at first grade level was evaluated by Bell, Switzer, and Zipursky (28) in a comparison of achievement between 112 beginners in traditional classrooms and 57 in an open-area school. At school entry, both groups were matched in perceptual, motor, and cognitive skills and were from middleclass families who did not differ significantly in socioeconomic background. The tests used as criterion measures in reading were the *Schonell Word Recognition* and the *Gates-MacGinitie Vocabulary*, A, Form 1 tests. Also administered was the *Cooperative Mathematics Test*, 12A. Comparison of mean scores on the criterion instruments at the end of the school year disclosed that the traditional group attained significantly higher mean scores in reading achievement than did those in the open-area school. No significant differences in mean scores were found in number concept. A comparison of percentages of children who scored below norms in reading in the 2 programs showed the failure rate for the open-area group to be twice as great as for the traditional group.

First grade pupils in 12 classes from 4 elementary schools were subjects in a study by Barr (19) to explore grouping and pacing practices in the teaching of reading. The *Metropolitan Readiness Tests* were used to collect test data on the subjects. First grade teachers were interviewed late in November and early in May to ascertain the composition of instructional groups and the pace of instruction. Number of stories read and number of new words introduced served as an index of instructional pace. All 4 schools used the basal readers and readiness materials included in their reading series. The major findings were that almost all teachers group for basal reading instruction; groups proceed at quite different paces; low-readiness children in a class tend to affect the forming of instructional groups and their pacing.

The level of assigned reading in textbooks was compared by Rubin (420) with the measured reading ability of 1,426 children enrolled in more than 400 elementary schools of Minnesota. The mean IQ of the population sample was 103 as measured by the *Stanford-Binet*, L-M, Short Form. Data were collected by classroom teachers, who administered reading subtests of the *Stanford Achievement Tests* (SAT) to subjects in the spring of each school year. The Paragraph Meaning subtest was administered to subjects in grades 1 through 5. Subjects in grades 3 through 5 were administered the Word Meaning subtest as well. Teachers also indicated the grade level of the reading textbooks used by the subjects for classroom instruction in reading. Data were analyzed in terms of the proportion of subjects whose scores on the SAT were above or below their actual grade placement compared with the proportion of subjects who were assigned reading textbooks that were either above or below their grade placement. Comparisons disclosed that the proportion of pupils who scored below the beginning of the grade level on the SAT and the proportion of pupils assigned textbooks at equally low levels was not statistically significant. In grades 1 through 5, the number of pupils who scored above the middle of the next highest grade on the SAT was 4 to 10 times as great as the number who were assigned reading materials at comparably advanced levels, indicating a minimal accommodation to the needs of the more able readers. More specifically, about 16 to 21 per cent of the children who scored on the SAT below their grade levels were assigned reading textbooks at equally low levels. At the same time, less than 5 per cent of the children in grades 1, 2, 3, and 5 and only 7.3 per cent of those in grade 4 were assigned textbooks at similarly advanced levels among those who scored on the SAT at or beyond the middle of the next highest grade.

Twenty-six first grade teachers were the subjects of a study by Miller and Hering (333) to ascertain the relationship between the reading placement level of pupils for group instruction and preference of teachers for teaching these pupils to read. Through use of a questionnaire, the teachers responded first by listing the names of the pupils and their assignment to reading groups. Then, a month later, the teachers listed their pupils in order of preference for teaching them to read. Also ascertained was the preference of teachers for teaching either boys or girls. Data were processed and correlated showing that teachers are inclined to prefer teaching their better readers. This was indicated by a coefficient of correlation of .5215. That teachers seemingly do not prefer one sex more than another was disclosed by a coefficient of −.0458.

Balyeat and Norman (16) investigated the effectiveness of applying cloze procedure as a method of testing comprehension and forming instructional groups based on reading materials written or dictated by children. A longitudinal study undertaken as a part of an ESEA III project involved a one-week exchange of teachers in 13 Appalachian counties with ESEA III itinerant specialists in regional demonstration center schools. Reading specialists collected samples of language experience approach (LEA) materials from grades one through 6 throughout the region; this material was later supplemented with stories gathered from grades 7 through 9. Materials judged representative of each grade level were selected by the project staff. A lexical cloze technique was employed to delete every fifth word which was a noun, verb, or adjective. These words were then paired with distractors of the same grammatical class and listed in random order on a duplicate copy of the LEA material. Tests were administered to 120 children in grades 2 and 5 in 1972-1973 and to 92 of those children in grades 3 and 6 during 1973-1974. Pearson product-moment coefficients were computed to determine association between LEA raw scores and selected reading related subtests of the *Stanford Achievement Test* (SAT). Testing at the end of the second year yielded coefficients of .70 for all third graders attending ESEA III classes at the 2 demonstration schools and .42 for sixth graders. Values of *t* obtained for these correlations exceeded significance at the .01 level. Since different forms of pre-test practice were used at each site during the first year, correlations were obtained for 2 practice and 2 non-practice subgroups. Coeficients for the second grade non-practice subgroups were .96 and .73; those for the fifth grade were .58 and .62. Coefficients for groups receiving no pretest practice were higher than those for comparable groups receiving some form of preparation. The authors conclude that LEA-cloze has value in either predicting or indicating reading levels of disadvantaged rural children.

Open-education experience in elementary school was examined by Samph and Campbell (428) to determine its impact on seventh grade achievement and attitude. Four groups of students were identified according to their status in the elementary school. These included 29 sixth graders who participated in an innovative curriculum and structure conducive to openness. Selected variables were used to assess achievement and attitude of students at the conclusion of the seventh grade as is in a traditional educational setting. Two scores, Paragraph Meaning and Mathematics Concepts, from the *Stanford Achievement Test* were used to measure students' performance. Attitudes were examined with semantic differential adjective pairs in the form of a questionnaire. Students' marks in various school subjects were also compared. The overall finding of the study was that an open-education experience in elementary school had no measurable effect on seventh grade achievement or the attitude of subjects in a traditional school program. No significant differences of mean scores were found on any comparisons among the groups.

V-11 Corrective and remedial instruction

Forty-nine high school students were used as reading tutors by Richardson and Havlicek (398) to evaluate the effect of tutoring on the reading achievement of children who were reading at least one year below their grade level. In one of 3 treatment groups, 215 children were randomly selected for analysis of growth in reading. The high school tutors received only minimal preservice training, and each one tutored 2 pupils following a specified time schedule and instructional procedures. Tutoring sessions were held in innercity centers. The *Stanford Diagnostic Reading Test*, Levels I and II were used as criterion measures to evaluate program effectiveness. The tests were administered in early November and again in the middle of May. Group I consisted of pupils whose parents consented to their children's participation in the program conducted during the regular school year. Group II consisted of pupils whose parents consented to their children's participation in a summer program. Group III acted as the control. With national norms for comparison of stanine scores, Group I in grades 2, 3, and 4 gained 2 stanine scores in Reading Comprehension at the end of the school year. Groups II and III increased only one stanine score.

Methods of peer tutoring were evaluated by Oakland and Williams (359) in a one-year study to facilitate the reading improvement of children reading below their grade placement. A total of 33 third and fourth graders from 2 elementary schools were tutees who were randomly assigned to one of 3 treatment groups. In all, 46 children were used as tutors. Scores on the *Metropolitan Achievement Test* (MAT) were compared among the 3 groups in pretest and post test conditions. One group, the Total Tutorial Program, was taught reading and spelling through the assistance of peer tutors rather than under the guidance of classroom teachers. A variety of instructional materials and methods was used under specific author-determined guidelines to be followed by the tutors. The second group, the Supplementary Tutorial Program, was given oral reading practice for 10 minutes with tutees and tutors reading aloud together in addition to the regular classroom reading program under direct teacher instruction. The third group served as the control who received the regular instruction only. Results showed no statistically significant differences in reading growth between the groups at the end of the treatment period. The Supplementary Tutorial group experienced approximately one year of growth in Word Knowledge on the MAT and about 6 months gain in Comprehension. The progress of the other 2 groups was below this level. The group receiving only peer tutoring averaged 6 months growth in Word Knowledge and 2 months gain in Comprehension on the MAT.

Two remedial reading programs were compared by Nelson and Peoples (354) in an investigation of paraprofessionals as teachers. The first program used the Sullivan Programmed Reading Series with college reading students as paraprofessionals who tutored 7 problem readers, ages from 5 to 15. The second program involved a variety of reading materials with volunteer women as paraprofessionals who tutored 7 problem readers from grades 2 and 3. All subjects were pretested and post tested with the *Spache Diagnostic Reading Scales*, and subjects were tutored individually 3 times per week in 30- to 45-minute sessions for 3 months. A comparison of mean scores on the criterion measure favored the program with college reading students as paraprofessionals at levels of significance.

Third grade corrective and remedial readers were subjects in a study by Kelly (256) to evaluate program effects of an experience approach on growth in sight vocabulary. From one elementary school, 64 children who were one or more years below reading grade level were assigned to one of 2 treatment groups. Half of the total subjects were designated as the Experience Story Group (ESG) and the other half as the Basal Group (BG). The ESG dictated and read their own stories while the BG read from controlled vocabulary materials. Both groups were instructed in 30-minute sessions which were scheduled 2 or 3 times a week during a 15-week period. All subjects were taught word recognition skills through Class Analysis. A comparison of mean pretest and post test scores on the *Botel Word Recognition Test* disclosed that the ESG had gained 22 per cent more sight words than did the BG. The combined mean gain in word recognition for both groups was 20 words.

Remedial reading practices in North Bedfordshire schools of England were reported by Limmer, *et al.* (291) in a survey based on 63 replies to a 10-item questionnaire. Some conclusions reached were first that about 83 per cent of the respondents suggested that classes were not sufficiently small to make special provisions in the classroom. Second, a teacher—preferably one qualified by training and/or experience—should be employed full-time to assist in special ways. Third, regular—and, if at all possible, daily—help was required by children with reading problems. Fourth, general language limitations in the home background of problem readers was considered one of the chief factors relating to reading difficulties. And fifth, overall facilities for remedial work were judged not entirely adequate.

Reading achievement of 134 remedial cases was analyzed by Silberberg, Iversen, and Goins (454) in a followup study to determine the long range effects of 4 treatment methods in remedial reading. Based on a group IQ test score of 90 and above and on being one grade below placement in reading, subjects were in one of 4 treatment groups in third grade remedial classes. Remedial treatment included the kinesthetic, phonic, visual, and the Orton-Gillingham methods. The subjects were tested before beginning remediation, immediately upon completion of the remedial year, and half-way through the fourth grade as a followup. Criterion measures in reading were the *Wide Range Achievement Test* and the *Gilmore Oral Reading Test*. At the end of the treatment period of one year, there was no significant difference in the criterion reading level of the 4 groups. However, the groups did gain an average reading grade level of 1.1 years from pretest to post test conditions. By the middle of fourth grade, the subjects did not sustain the same rate of growth. The groups made mean increases of 2 or 3 months on the criterion reading measures after 6 months, following the completion of the remedial reading experience.

The impact of teacher aides on reading gains of 44 problem readers from grades one through 4 was examined by Burgett (61) in 2 treatment conditions. In one school, 9 subjects received daily reading assistance by an aide. The assistance was based on diagnosed needs for a school year and was given in addition to regular class instruction. In another school, 15 subjects received reading assistance from an aide in the afternoons for one-half of a school year in addition to the regular class instruction. Controls were used and did not receive any special reading assistance. Pretest and post test scores were compared on the *Durrell Listening-Reading Tests* to derive ratio of learning rates. It was found that children taught by an aide all year made greater gains in reading than did those taught half a year, showing a learning rate gain of 1.3 months in reading per month in comparison to .9 for those aided for 6 months. For the controls, the rate of reading deficit increased.

The effects of racial integration on the academic performances of 680 black, 127 Indian, and 608 white students were analyzed by Maynor and Katzenmeyer (317) in a newly-integrated tri-racial system involving grades 6-12 in Hoke County, North Carolina. The pre- and post-measure was the *California Achievement Test* (CAT) to determine student progress during the first year of integration. Also administered was the *California Test of Mental Maturity* (CTMM). Findings disclosed that black students performed better after integration than they did before integration. When each subject's post test score was adjusted for the overall mean reading pretest and CTMM scores, it was found that there were no significant differences among the 3 ethnic groups' mean adjusted reading scores on the CAT. Other findings were reported relative to language and mathematic scores of the subjects in the study.

Error behavior in oral reading performances of 24 high school drop-outs, ages 18 to 37, was analyzed by Mays (318) in 3 experimental conditions. Subjects were divided into 3 treatment groups. Group I was exposed to verbal reinforcement as the operant conditioning paradigm. Group II was treated to classical conditioning whereby the new or unknown word was the neutral stimulus, and the evoked meaning response of the known synonym was the unconditioned response for the subject. Group III was instructed to close an electrical switch as quickly as possible after recognizing an oral reading error was made. The reading materials read by all subjects came from a standard basal reader series with levels of reading difficulty graduated from third grade level to ninth grade level. The treatment sessions were tape recorded to produce error frequency data. The subjects read aloud from the basal text with the instructor following the prescribed treatment conditions. The dependent variable consisted of a rank-frequency word distribution for all of the words appearing in the reading materials for the first 26,000 words read by the subjects in instrumentation booths. Pretest and post test standardized and non-standardized measures were used to assess general progress. Findings disclosed from analysis of test data that the declining error probabilities were significantly related to the increasing vigilance probabilities in an inverse manner. Both of these variables were significantly correlated to the number of reinforcements received by each subject. Subject-by-subject comparisons of the cumulative error plots and the cumulative vigilance plots indicated that the vigilance variable produced the same schedules of error detection as they produced schedules of reinforcement for the operant conditioning paradigm.

An assessment of academic achievement of the Seminoles was conducted by Greene and Kersey (182). *The Wide Range Achievement Test* (WRAT) was administered to 24 Big Cypress children in grades K-7 once in mid-September, 1972, and again in late April, 1973. The purpose of pretesting and post testing was to compare the progress of the subjects to national norms in areas of reading, spelling, and arithmetic. Analysis of the test data revealed that pre-WRAT scores were one and one-half standard deviations below the national median in reading and in arithmetic, and the post-WRAT scores were found to be one standard deviation below the median. The median standard score for each of the subject areas lagged behind at about the sixteenth percentile on the post tests. Conditions and problems of Indian education were discussed in the report and included a comparison of student performances on the WRAT between the Big Cyprus subjects and students at 2 other Seminole reservations.

A total of 48 elementary pupils classified as mentally retarded from low income families was used in an experiment by Haring and Krug (197) to determine whether pupils in special classes could return to regular classes. Subjects were selected through a random process and assigned to one of 4 classes, with 2 serving as experimentals and the other 2 as controls. According to Stanford-Binet scores, the experimental group's mean IQ was 72.3 and the mean for the control group was 71.9. For a year, the experimental treatment that incorporated principles of instruction based on contingency management, continuous measurement procedures, and programed materials was given. A comparison of experimental and control class achievement was made from pretest and post test results on the *Wide Range Achievement Test;* gains favored the experimentals. Performances in reading and arithmetic served as criterion for the return of subjects to regular classes. As an outcome, 13 experimentals qualified. A one year followup study showed that a high per cent of the subjects acquired basic skills at a rate to allow regular class placement.

The use of i.t.a. as a medium of remedial reading instruction was assessed by Lane (276) in a program to improve the reading achievement level of 14 seriously disabled readers. The sixth grade subjects were identified as reading at or below the second reader level on the *Gray Oral Reading Test* (GORT). For 100 school days over a 6-month period, the subjects were given 40 minutes of remedial instruction using the i.t.a. Post test scores on the GORT showed a mean growth of 1.1 years for the 6-month experimental period from the average score of 1.6 years at the start.

Special education programs were critiqued by Milofsky (339) to describe how regular teachers and administrators limit the ability of special education teachers to implement effective programs in schools. Special education was described as a marginal enterprise where specialist teachers face the same political obstacles to their access, power, autonomy, and program goals that personnel in many marginal enterprises do in other large organizations and systems. Evidence in the report was collected by the investigator chiefly from observations of special education programs in schools funded under the 1964 California Educationally Handicapped Minors Act and from interviews with state and local program administrators of California.

The effect of tutoring with direct and daily feedback on progress of pupil performance was evaluated by Jenkins, Mayhall, Peschka, and Townsend (236), using 6 primary-age children with problems in word attack skills. Each subject participated in 2 experimental conditions, one involving feedback information daily to subjects and the other not including feedback information. The 6 subjects were tutored twice daily for 10 days in 15-minute sessions each in the morning and in the afternoon to cover the 2 experimental conditions. Samples of 20 words each were drawn from the Sullivan Reading Program to serve as learning stimuli—one in each condition. Mean pretest and post test word recognition rate comparisons favored the charted feedback condition. Individually, all 6 subjects gained more in condition feedback than they did in condition non-feedback.

The effectiveness of TV in teaching sight words was examined by Hargis, Gickling, and Mahmoud (196) among 8 primary-age learning disability cases who were a year or more below normal academic achievement. Prior to the television presentations, 2 separate sets of sight words were selected and matched on the basis of equivalent difficulty level. One set was presented via a National Educational Television program in a series of 32 daily broadcasts. The other set of words was not presented by any teaching procedure. After instruction, each student was tested on the ability to recognize both sets of sight words. The results indicated that student scores obtained through the television medium were no higher than scores which received no presentation.

The role of a stratistician was conceptualized by Buffmire (60) in a report on the use of a strategist-diagnostician in planning programs for learning handicapped children. Guidance for the use of a stratistician as a resource person for teachers was given chiefly by the Rocky Mountain Regional Resource Center. The stratistician was an interface between regular and special education to provide a continuum of educational growth for the handicapped child in an elementary school. Six specialists were employed to implement the stratistician concept in selected Utah schools. After one year, the effectiveness of the strategist-diagnostician appeared to be determined by such factors as socioeconomic level, ethnic makeup of the students, community and parent concern, school philosophy and organizational factors. Data also indicated that there may be a need for a multi- rather than a uni-stratistician model to meet the varying needs of urban and rural schools.

A followup study on 30 clinic cases was conducted by Winkley and Meyers (548) to assess reading achievement and attitudes of subjects after a 2- or 3-year period from date of reading diagnosis. Criterion measures in reading were the *Gates-MacGinitie Reading Tests* (GMRT) and the *Gray Oral Reading Test* (GORT). Additional data were collected from students, parents, and teachers on author-developed attitude techniques. It was found that, on the average, the subjects, who ranged from fourth to twelfth graders, gained in reading about a year for each year after the original testing. The subjects reported a positive attitude towards reading, and 68 per cent of the parents responded in a positive manner to the reading diagnosis given to their children.

Muehl and Forell (345) conducted a followup study to investigate the high school reading performance of a group of 43 subjects (M = 36; F = 7), originally diagnosed as disabled readers, and to relate this performance to selected variables obtained at the time of diagnosis. These variables included electro-encephalographic (EEG) classification, IQ, CA, and parental background. An additional purpose was to determine the effects of varying amounts of clinic instruction following diagnosis on subsequent reading performance. All subjects of the earlier study were included if their scores were available from the *Iowa Tests of Educational Development* (ITED) and whose WISC Full Scale IQ exceeded 89. A normalized standard score average of performance on the 3 reading subtests of the ITED served as the dependent variable. Reading performance on the ITED at followup indicated that 2 subjects (4 per cent) had reading scores above the fiftieth percentile, *i.e.* poor readers (as a group) continued to be poor readers in high school 5 years after diagnosis. An alternate definition of reading retardation based upon the number of years of reading instruction at the time of diagnosis and an average of performance on the *Durrell Analysis of Reading Difficulty* and *Iowa Tests of Basic Skills* was used to determine retardation of the followup EEG group. The abnormal EEG group exhibiting positive spike patterns other than 14 and 6/sec. continued to be least retarded. Overall mean differences for 3 EEG classifications (normal; abnormal with 14 and 6/sec. positive spike; and abnormal EEG patterns other than 14 and 6/sec.) did not reach significance. Neither were IQ and CA differences significant among the groups. Analysis of covariance was used to control for differences among the groups in

CA and reading grade at diagnosis. Adjusted ITED mean differences were not significant, although direction of difference was consistent with results at diagnosis: The Abnormal-Other EEG group tended to be better readers. The WISC Verbal IQ coefficient of correlation with ITED was significant; Performance IQ was not. CA at diagnosis was significantly related to high school reading. Parental occupation of students with extreme scores on the ITED differed, with the majority of parents of best readers involved in professions while the majority of parents of poorer readers worked in "blue collar" jobs. Results indicated that early diagnosis, regardless of amount of subsequent clinic instruction, was associated with better reading performance at followup.

V-12 Teaching—testing

The data in the Equality of Educational Opportunity Survey, namely the Coleman Report, were interpreted by a few to mean that school differences have little impact on achievement. It was believed that this interpretation was derived from the fact that 10 per cent of the variance in test scores was associated with differences between schools, while about 90 per cent was associated with differences between individuals within schools. Given the impact of the Coleman Report on federal policy and the allocation of federal funds, Carver (74) pointed out in a critique the inappropriateness of the tests used in the Coleman Report. In particular, the standardized tests as used were actually designed to maximize individual differences in achievement within a group and to minimize between group variance. It was believed that the report's tests were biased against finding large differences between schools in achievement. The critique considered that the Coleman report results reflected more upon aptitude than upon achievement for school comparison purposes. As an alternative, it was recommended that criterion-referenced tests or edumetric tests be used for school comparison to avoid bias against individual differences.

The National Assessment of Education Programs (NAEP) was examined by Glock (173) to determine the value of the data in general and the implications of national assessment for reading instruction in particular. Ten subject areas including reading comprised the national assessment census. The exercises in these subject areas were administered to 4 age groups by geographic regions with consideration to sizes and types of communities. In reading assessment, 5 objectives were measured. They included 1) to comprehend what is read, 2) to analyze what is read, 3) to use what is read, 4) to reason logically from what is read, and 5) to make judgments about what is read. These objectives were measured in terms of 8 categories relating to skills important to reading. Reading rate was considered also. A variety of implications was discussed including the value of determining strengths and weaknesses in skill achievement for groups of pupils.

Several school effectiveness indices based on longitudinal data were compared by Marco (314) in a study of 3,769 third graders from 70 elementary schools that participated in a 1970-1971 ESEA Title I statewide evaluation study in the Midwest. Forms F and G of the Primary II *Metropolitan Reading Achievement Test* were administered. Total Reading standard scores from fall 1970 and spring 1971 administrations were used to compute school effectiveness indices. In terms of reading ability, the sample was about 6 months behind the norm for students in the second month of their third year. A total of 30 variables were used in the study and were derived from state records, a questionnaire about Title I reading programs, enrollment statistics, test scores and related information, and school effectiveness data. Five methods were used to compute school effectiveness indices. The results showed that school effectiveness indices derived from the 5 methods differed from one another, although the 5 methods of estimating school effectiveness indices yielded indices that were highly correlated. Also shown, except for within-school regression school effectiveness indices for high scoring students, the various indices were highly stable from sample to sample.

Two comparisons were made of individual reading gains of 130 second through sixth grade children on the *Gates-MacGinitie Reading Tests*. Assessment of crude and residual reading gains was investigated by Carpenter, Gray, and Galloway (72) on the subjects by grade level. Crude gain was obtained from the difference between scores on the pretests and post tests, and residual gain was calculated from the deviation of the observed post test score from the regression line of final on initial scores. Results showed that reading improvement as measured by crude gain scores differed from the residual gain scores on all grade levels. However, when the scores were converted to standard scores, residual gain appeared no more effective than did crude gain in measuring reading progress.

Examples of ways to determine empirically contingency relationships among objectives was presented by Roudabush (415), using items from a commercially developed, criterion-referenced reading test. It was pointed out that a contingency relationship can be found between 2 objectives by examining a contingency table or a proposed corresponding table of proportions. Considerations of chance factors are also shown how to be determined from a table of proportions.

The performances on repeated oral readings of passages were examined by Gonzales and Elijah (175) in a study of 26 third graders to determine the effect of repeated readings on error patterns and performance levels on the informal reading inventory. The subjects were average readers from a middleclass elementary school in the Southwest. Extended oral reading passages were administered to the subjects individually as test measures. Under control conditions, each subject read aloud a passage at instructional level and then immediately reread it. The same procedure was followed for the frustration level passage. Each of 4 readings was taped for scoring and analyzing performances. Results of analysis show that the subjects exhibited consistent types of reading behavior regardless of the difficulty level of the passage. However, a significant difference was found between the first and second readings on the number of errors with a reduction in errors occurring in the second reading of the passage at both instructional and frustration levels.

A simple technique for assessing comprehension performances of 13 normal second graders and 13 poor readers was examined by Guthrie, Seifert, Burnham, and Caplan (191). This assessment procedure, called the maze technique, consists of a series of sentences taken from graded materials; and each sentence is modified by providing 3 word choices for every fifth or tenth word. The sentences are read silently, and pupils identify from given choices the appropriate words that complete the meanings of the sentences. In the experiment, the maze technique was applied to 160-word passages from stories in basal readers that were rated at a low-second reader level. Performances on a maze measure and then in an oral reading measure on the same selection were ascertained from the 2 groups, who were matched on standardized sight vocabulary and on intelligence. Data were calculated in terms of per cent scores on accuracy of oral reading and of comprehension on the maze task. A ratio of comprehension level to oral reading was established for each subject. A ratio less than 1.00 indicated that a child read orally material with comprehension difficulty, and a ratio greater than 1.00 indicated that the comprehension performance surpassed the oral reading performance. Among the findings, poor readers were found to have a higher incidence of comprehension difficulty. The maze-oral ratio for normal subjects was 99 per cent and 72 per cent for the poor readers.

Five hundred and ten multiple choice items used in 9 standardized reading tests designed for high school students were studied by Pyrczak and Rasmussen (386) to classify test items according to their purpose. Criteria for item classification were based on a comprehension model by F. B. Davis. Findings indicate that there were variations from test to test not only in the number of reading skills measured but also in the relative emphasis on the various skills.

Two tests, one including only passage-dependent items and the other passage-independent items, were developed by Tuinman and Farr (507) to compare the effects of passage length and test directions. Each test was administered under 4 conditions to compare "look back" versus "don't look back" for short and for long test passages. Subjects were 30 randomly assigned eighth grade students for each of 8 experimental conditions, plus 2 groups of 20 students each of whom attempted the items without the passages. All subjects were from the same junior high school in a small Midwestern city. The effect of the 2 tests was analyzed separately for each set of items. Results of the analysis of variance for the independent and for the dependent test items showed no significant differences of mean scores relating to the passage length and test direction conditions.

Items from Part II of the *Traxler High School Reading Test*, Form A, designed to measure the ability to identify the main ideas of paragraphs were administered by Pyrczak (384) to 2 sample populations without the associated paragraphs. The 2 samples consisted of 55 graduate students and 71 students at an innercity high school. Of particular concern in the experiment was an evaluation of the passage dependence of test items in standardized reading tests. Each sample was randomly divided. One half was given brief, general directions for answering the items in the absence of the passages. A comparison of mean scores showed no significant difference in the effect of long or short directions on test performance. However, the means for the innercity students who were given the short and long directions were 8.33 and 8.11 on the reading test of 18 test items without the associated paragraphs to read. For such a test, the random guessing factor was 4.5, and the results indicate test performances greater than chance even when special instructions were not given. Similar findings were noted for the college sample that showed higher mean performances than did the high school sample. Suggested in the study was use of an index to calculate the passage dependence for test items.

Twelve multiple choice questions with 4 choices each were used by Pyrczak (385) in an experiment to determine passage dependence of reading comprehension questions. Many reading comprehension tests include questions to be answered based on specific passages to be read. When answers to questions are dependent on reading-associated passages in a test or exercise, the questions are characterized as passage-dependent. In the study, 47 college students answered the experimental questions without benefit of associated passages. It was found that the mean and standard deviation of the scores were 7.55 and .68 respectively where chance alone would account for 3 correct responses. The importance of designing passage-dependence items in the construction of comprehension tests was discussed with a review of possible factors that explain why a student may answer comprehension questions without carefully reading the associated passages.

Five popular standardized tests of reading comprehension were examined by Tuinman (504) to determine the extent to which questions used for each test could be answered without reading the passages upon which those questions are based. This relationship is called passage dependency, and indices of paragraph dependency for the 5 tests were sought to show the degree that performances on test items are dependent on reading the associated passages. The sample for the study was comprised of 9,451 students in grades 4, 5, and 6 from 10 school systems across the state of Indiana. The tests used in the study were the *Nelson Reading Test*, *California Achievement Tests*, *SRA-Achievement Series; Reading*, *Metropolitan Achievement Tests*, and the *Iowa Test of Basic Skills*. The tests of reading varied considerably in the degree to which their items are passage-dependent. None of the tests could be rated as having all items entirely dependent on reading the passages for answering. Average probabilities of correct responses with no passage present ranged between .32 and .50 in comparison with the expected change probability of .25. Given in the report were statistics for calculating passage dependency.

Performances on a comprehension test were assessed by Sidman and Willson-Morris (452) in a study of 14 normal adults who were administered 20 multiple choice questions without the associated passages. The questions were taken from a widely used aphasia test. The results showed that of the 20 questions given, 17 were answered correctly by at least 2-thirds of the subjects. Item analysis was made to show the possible cues given in the questions leading to correct responses.

A total of 581 school districts responded in a nationwide survey by Maitland, Nadeau, and Nadeau (306) to ascertain the prevalence of early school screening practices, the specific tests employed, and the use made of the test results. Questionnaire responses indicated that most districts do early screening and that a variety of measures were employed, although the *Metropolitan Readiness Test* was used by a 36 per cent of school districts. Tests given at the end of the kindergarten year are most often used for determining first grade placement. When asked why a particular readiness measure is used, school districts most often responded that the professional staff recommended it. Those districts which screen before kindergarten, or on entrance into kindergarten or first grade, tend to use the results equally often to individualize instruction. When making decisions about a child, most districts view teacher judgment as more important than test results unless screening is done early before teacher judgment is employed.

A battery of prereading scales were developed and administered to 814 first graders in a study by Hartlage (201) to determine appropriate reading instructional approaches. Scores on each scale were subsequently correlated with scores on the *Wide Range Reading Test* (WRAT) that was given at the end of first grade. Separate correlations were calculated by sex and by type of reading programs. Children were taught by either a standard basal approach, a linguistic approach, or the i.t.a. approach to beginning reading. Correlations ranged from .439 to .125 among all the relationships examined between auditory and visual readiness ratings and performances on the WRAT.

Two strategies for identifying kindergarten age children with high risk of becoming reading failures were compared by Feshbach, Adelman, and Fuller (146) in a 2-year study. One approach places primary emphasis on pscyhometric test procedures assessing linguistic and perceptual motor skills related to reading readiness. In particular, 1,732 kindergarteners in Vancouver schools were administered the *Wechsler Preschool and Primary Scale of Intelligence*, the *Otis-Lennon Group Intelligence Test* and the *deHirsch Predictive Index of Reading Failure*. The other approach was based on pupil observations by 32 kindergarten teachers according to an author-constructed rating scale of a child's cognitive, affective, and social functioning in the classroom. Among the findings from correlation analysis: the kindergarten teachers rated pupils' predicted first grade reading achievement about as efficiently as did the psychometric battery of tests designed for that purpose.

A study of the validity of the *Metropolitan Readiness Test* (MRT) by Lewis (285) involved 40 subjects who had just completed kindergarten. The criteria were *Lee-Clark Reading Test* (LCRT) scores and teacher ratings, which were secured at the end of the first grade. A matrix of correlations among the 3 variables produced validity coefficients for MRT of .67 with LCRT scores and .61 with the teachers' ratings.

Children's willingness to skip passages when answering reading comprehension questions was studied by Tuinman (505), using 48 sixth grade students from a rural Midwestern community. The test materials consisted of 32 items, of which half were passage-dependent items and the other half passage-independent items. Each item was based on a separate passage (with the question on the front page and the accompanying passage on the back). Tests were administered individually, with instructions that it may or may not be necessary to read the test passage. Timed and untimed conditions were also included. Results of the analysis of variance disclosed that high passage independence produced fewer instances of skipping passages in test taking than did low passage independence. The effect existed under both timed and untimed conditions.

A sample of 910 subjects from Minnesota schools tested by Rubin (419) on the *Metropolitan Readiness Tests* (MRT) in a study of the validity and reliability of the MRT for use at the preschool level. Scores on the MRT obtained during the summer prior to kindergarten entrances correlated .65 with MRT scores obtained one year later, at a pre-first grade level. Correlation coefficients between scores on the pre-kindergarten MRT and late first grade scores on the *Wide Range Achievement Test* were .52 for Reading, .51 for Spelling, and .49 for Arithmetic. Similar findings were disclosed on the predictive values of achievement for the MRT scores obtained at pre-first grade level.

The regression of 5 achievement criteria on the 6 *Metropolitan Readiness Test* (MRT) subtests was calculated by Engin (138) for a sample of 100 subjects to predict first grade reading and arithmetic achievement. The MRT was administered at the end of kindergarten, and the *Gates-MacGinitie Reading Test* and the arithmetic subtests of the *Stanford Achievement Test* were administered at the end of first grade. Results indicated that the MRT predicted first grade arithmetic better than it did reading and that alphabet and number subtests were the best predictors among the 6 subtests of the MRT. A sex difference was found in favor of the girls on the criterion measures of reading.

From a 1972 study of 228 kindergarten children who were given screening tests to identify early learning difficulties, Eaves, Kendall, and Crichton (126) used 163 remaining subjects in a followup study 3 years later on predictive values of second grade achievement. Among the 196 variables correlated, multiple regression analysis selected several predictors of achievement on the *Cooperative Primary Test*. Scores on subtests of Draw-a-Man, Print-Your-Name, Wepman, Horst Reversals, Gates Word Matching, and Pencil Use correlated $R^2=.80$ with performances on Word Analysis. Bender, Categories, and Pencil Use scores correlated $R^2=.58$ with performances on Listening. Scores on Horst Reversals, Word Reproduction 1, and Pencil Use correlated $R^2=.46$ with reading comprehension scores. In each case reported, the subgroup scores accounted for most of each correlation. Also included in the investigation were findings on 50 subjects who received additional testing on psychological and neuropediatric measures.

The cloze procedure as an indicator of the instructional level of 56 problem readers was studied by Peterson and Carroll (378). The subjects were in grades 6 through 9 and were judged disabled with reading comprehension scores 2 or more years below grade placement. Data were collected from 2 tests given to each subject. From the *Nelson Reading Test*, Form A, grade scores were obtained with a range between 3.5 to 6.1. Cloze tests were based on 275-word selections from health education textbooks and were rated according to the Dale-Chall Readability Formula. Results support the value of the cloze technique in predicting the instructional levels of disabled readers.

Significant age and sex differences were noted by Jordan (245) in a review of the standardization data concerning the *Jordan Left Right Reversal Test*. Over 3,000 children, ages 6 through 10, formed the sample. Consisting of printed letters and numbers for pupils to cross out, the test purports to screen mirror imaging and reversal problems in children up to 11 years of age. A 3-factor analysis of normative data was employed to show the effects of age, sex, and symbol type on error score. According to developmental curves, the mean raw scores decreased by chronological age with a sharp decrease through age 8 and a half. Mean boy scores were higher than mean girl scores for all age groups. When means of normal children were compared to means of neurologically impaired children, the impaired group made significantly more errors, at all ages, than did the normals.

Performances on a test of specific coding skills were compared by Gallistel (165) with achievement levels of 55 pupils on 2 standardized tests of word recognition. The subjects of the study were randomly selected from low and middle reading groups in first and second grades, including a sample of 15 second graders in a learning disability program, all from 4 schools in a large suburban school district. The test of specific coding skills was an experimental measure to assess performances of decoding 8 word categories by phonic structure and by grapheme-phoneme combination. These categories follow a pattern common to word patterns in linguistic readers. Standardized test performances in word recognition were measured by the Subtest of Word Recognition in the *Stanford Achievement Test* and the *Wide Range Achievement Test*. A comparison of the performances of the children on all 3 measures showed different patterns of coding skill mastery by pupils with similar scores on the standardized tests. Small differences in mastery of phonic skills were found between performances of middle group readers in first and in second grades.

Experimental versions of 2 levels of the *Primary Mental Abilities Test* (PMA) were used by Jones and DeBlassie (243) to predict reading and arithmetic performances of low achievers. The experimental measure included subtests of Perceptual Reasoning and Spatial Relations to form a figure composite score with a minimum loading on previous educational experience. The subjects were a total of 58 fifth graders and 123 seventh graders who obtained stanine scores of 5 or less on the Reading or Arithmetic subtests of the *SRA Achievement Series* (SRAAS) and who were tested with the experimental version of the PMA. Two matched groups were formed at each grade level which were equivalent in terms of reading or arithmetic achievement (low) and different (high or low) in scores based on an ability test using figure composite items only. A comparison of mean scores was not significant in reading between high and low figure composite groups who were tested a year later on the SRAAS.

A criterion referenced test of 45 items was developed by Lichtman (289) to assess functional literacy among adolescents and adults. Test content related to practical life experiences to include, for example, reading schedules, tables, maps, advertisements, fill-in-blank forms, and labels. An untimed test, it was designed to be administered individually with the use of a controlled audio-cassette input for all test directions, information, and questions with the test booklet presenting facsimiles of the various reading materials. Answers call for student-constructed, or open-ended, responses. Student responses were scored correct or incorrect according to a predetermined objective scoring key. Data relating to individual item and total test statistics on reliability and validity are reported from testing results of 434 Job Corps enrollees, ages 16 to 21.

An evaluation of the *Peabody Individual Achievement Test* (PIAT) was made by Burns (62) to study the validity of the PIAT when used with primary age children classified as educable mentally retarded. Randomly selected as subjects were 55 children from 9 EMR classes in southwestern Ohio. The mean IQ was 72.4 for the sample as determined by the *Peabody Picture Vocabulary Test* (PPVT). All subjects were administered the PIAT, *Wide Range Achievement Test* and the PPVT. Scores from these measures were statistically treated by partial correlations analysis. The Reading Comprehension subtest of the PIAT was not included for analysis because test items were too difficult for the subjects of the study. Convergent validity was found for PIAT Mathematics, Reading Recognition, and Spelling Subtests. However, discriminant validity for PIAT Mathematics and Spelling subtests was judged as not demonstrated.

To determine the effect of 2 types of pupil-response procedure on test reliability, Beck (27) analyzed scores of over 4,000 pupils in grades 3 and 4 from 9 school systems in various locations representative of the national school population. The *Metropolitan Achievement Test* was administered to the subjects, using 2 different answer media formats in each school system and grade. Half responded in their booklets and half used answer folders. The 2 groups were matched by grade in general scholastic aptitude. Results indicated that the use of different response documents by pupils in the study did not significantly affect achievement test reliability, although the separate answer folder group received lower scores on the MAT than did the group responding in the test booklets.

A comparison of the *Neale* and the *Daniels and Diack Reading Tests* were made by Moorhouse and Yule (343) based on tests of 16 boys and 16 girls in the fourth year of a South London primary school. Data from the intercorrelations of test scores disclosed high correlations, suggesting that all 3 tests measure the same skills.

A criterion-referenced assessment system for evaluating reading instruction of bilingual children was described by Cornejo (89) for a proposed field testing program on the use of objective-based test items. General categories of reading objectives were described with examples to show the basis for the design of a comprehensive evaluation system for Spanish reading for students in grades kindergarten through 12.

The relationship between performances on a variety of psychometric measures and achievement in reading was examined by Camp (66) in a study of 69 severely disabled readers. Ranging in age between 9 and 13 years, the subjects were taught in a standard tutorial reading program involving token rewards for correct responses during the lessons. Prior to treatment, subjects were tested on the *Wide Range Achievement Test* (WRAT), the *Bender-Gestalt Visual Motor Test*, the *Raven Progressive Metrics*, a test of auditory-visual integration, and a test of visual-spatial perception. Post test results were also secured on the same measures. In general, results show a high test-retest correlation and significant intertest correlation among the scores on the psychometric measures. However, no relationship was found between scores on the psychometric measures and gains in reading as measured by the WRAT.

The Estes Attitude Scale (EAS) was examined by Dulin and Chester (122) in a validity study with 140 eleventh graders from a comprehensive high school in Madison, Wisconsin. The EAS consists of 20 statements, 8 to evoke positive responses and 12 to evoke negative responses concerning attitudes towards books and reading. Each student completed the EAS approximately 5 days before the collection of the criterion-measure data. Criterion measures included the students' own responses to several self-rating scales and teacher judgment of students' attitude. Correlations between scores on the EAS and pupil self-rating was .602 on liking for reading, .547 on amount of reading, and .634 on respect for reading. EAS and teacher-rating scores correlated .389 on amount of reading and .900 on liking for reading.

A reading-storage (RS) type of test was evaluated by Carver (75) in a comparative study to modified forms of cloze tests in 3 experiments. Subjects were 48 college students from the University of Maryland; they were paid to participate in the experiments. The RS technique consisted of an original passage printed entirely in capital letters; however, every other word in the selection was represented only by the first letter of the word. In each consecutive set of 5 such initial letters, one was deleted and replaced with an incorrect alternative according to a prescribed algorithm. For test taking, an individual reads first the original passage and then without referring to the original passage, takes the RS test by identifying the one wrong initial letter in each set of 5. The experiments involved several conditions: reading versus non-reading of passages, varying degrees of passage deletion, and varying amounts of interpolated activity between passages and tests. Findings showed that the RS test was seemingly more reliable and equally as valid as the cloze test in measuring gain in understanding what was read.

Scores on the *Illinois Test of Psycholinguistic Abilities* (ITPA) were used by Rosenfield (412) to predict reading ability of 30 first graders. Reading achievement was measured by Spache's *Diagnostic Reading Scales* (DRS). The *Kent Series of Emergency Scales* (KSES) was used as a measure of general mental ability. Correlations between ITPA scores, KSES scores, and DRS scores were computed; and only the correlation between ratings of mental ability and reading reached significance at .05 level. Of the individual subtests of ITPA, scores on Visual Perception, Grammatic Closure, and Sound Blending reached a significant (.05) level of correlation with DRS scores. The ITPA scores predicted a R=.63 with DRS scores from a stepwise multiple regression analysis. When patterns of ITPA scores were compared, no patterns were significant to indicate future reading levels.

The relationships of auditory discrimination, intelligence, and reading achievement were investigated by Machowsky and Meyers (303), using 78 white first graders as subjects from 2 schools in a middleclass suburb. Scores were analyzed from the *California Test of Mental Maturity*, *California Achievement Test*, and Buktenica modification of the *Wepman Auditory Discrimination Test* to determine the prediction of auditory discrimination to reading achievement. A step-wise multiple regression analysis showed that auditory discrimination produced a significant $R^2=.14$ which entered first in the equation. The group measure of intelligence did not produce a significant increase in R^2. Auditory discrimination errors correlated .48 with reading achievement in comparison with a .29 value for intelligence and reading.

The relationship between scores on the *ABC Inventory* (ABC) and the *Metropolitan Readiness Test* (MRT) was examined by

Van Horn and Holland (512) using as subjects a total of 448 kindergarteners who attended schools in a medium size Michigan community. The ABC was administered individually to subjects each spring that preceded their kindergarten entrance for the years 1970 through 1972. The MRT was administered in a group setting in the spring of the kindergarten year. A factor analysis based on ABC and MRT subtest scores was used to determine the major factors involved in the 2 tests. It was found that the 2 Verbal subtests of the ABC accounted for 32.4 per cent of the variance in the MRT scores with R=.57. The other 2 subtests of the ABC, Perceptual-Motor, accounted for about the same amount of variance in the MRT scores with R=.56. When both the Verbal and Perceptual-Motor subtests of the ABC were used to predict MRT performance, they accounted for 42.8 per cent of the variance with R=.65. Adding age and sex to the ABC subtest scores made no significant difference in the predictive value of the ABC.

The validity of the *Vane Kindergarten Test* (VKT) in predicting kindergarten and first grade achievement was investigated by Powers (381) in a study of 148 pre-kindergarteners (Group I) and 141 kindergarteners (Group II) as subjects. The VKT consists of 3 subtests. The Man subtest requires the drawing of a figure. The Perceptual-Motor subtest involves the copying of certain concrete symbols. And the Vocabulary subtest is an 11-word test administered individually. An IQ score is obtained for each of 3 subtests. The VKT was administered to all subjects in the spring. The *Metropolitan Readiness Test* (MRT) was given to Group I approximately one year after the VKT administration. Similarly, the *Stanford Achievement Test Battery* (SAT) was given to Group II as criterion measure. Correlations between each of the VKT subtest scores and scores on MRT and SAT were calculated. The VKT-SAT correlates ranged between .12 to .47 with the latter correlation between VKT-Vocabulary and SAT-Vocabulary. Also low to moderate correlations were obtained between scores on VKT and MAT with a range between .38 to .53.

The relationship between convergent and divergent thinking in science was examined by Cohen (83) using 92 sixth and 97 seventh graders who were exposed to discovery learning in science. Both classes of subjects were above-average in reading and were attending public schools in a middleclass neighborhood urban school. Two author-constructed tests were used as measures of convergent and divergent thinking. The tests were given consecutively in the regular classroom environment, with the convergent test preceding the divergent test. Pearson product-moment correlations between the scores of the 2 measures yielded coefficients of .52 for the sixth graders and .03 for the seventh graders. Comparison of mean scores produced significant differences between sixth and seventh graders on both measures. While the seventh graders outperformed the sixth graders on the test of convergent thinking, the sixth graders achieved higher scores than did the seventh graders on the test of divergent thinking.

A norm-referenced test battery and a criterion-referenced test were administered to 329 sixth graders in a study by Wakefield, Veselka, and Miller (518) to determine whether the same reading skills were measured by the 2 tests. Nine subtest scores from the *Iowa Tests of Basic Skills* (ITBS) and 27 subtest scores for objectives from the *Prescriptive Reading Inventory* (PRI) were obtained for each subject. Canonical analysis was used to identify components in each of 2 sets of variables that were maximally related. Statistical treatment produced 3 significant canonical correlations. The first correlation of .86 accounted for 75 per cent of the total variance of the ITBS and PRI variables. The second correlation of .43 accounted for 10 per cent of the remaining variance, or 5 per cent of the total variance of the ITBS and PRI scores. The third correlation of .42 accounted for 18 per cent of the remaining variance, or 4 per cent of the total variance. In all, the 3 canonical correlations indicated that 84 per cent of the total variance of the scores on the ITBS and the PRI was shared. The major difference between the 2 tests is the scoring procedures used and the way test information is presented.

The relationship among several perceptual-motor tests was studied by Chissom, Thomas, and Collins (77). Comparisons of the ability of the measures to predict 2 academic variables were also investigated. The 4 tests used were the *Frostig Developmental Test of Visual Perception; Shape-O Ball Test;* Oseretsky tests; and the stabilometer, a dynamic balance test. Each test was individually administered to the 20 boys and 19 girls in the kindergarten of a laboratory school. Academic measures were the *Otis-Lennon Mental Ability Test* and a teacher rating based on 4 areas of achievement: readiness, quantitative, verbal, and listening. Teachers were asked to rate pupils on a one to 9 scale in each of the areas. The Shape-O Ball and the Frostig were highly correlated, but the Oseretsky did not correlate significantly with any of the others. Both the Shape-O Ball and the Frostig showed high correlations with the academic measures. Stepwise multiple correlation used to predict the 2 academic criterion measures indicated that only the Frostig and the Shape-O Ball combined for the Otis-Lennon. For teachers' ratings, the 2 tests plus the stabilometer yielded a total R of .834.

Telegdy (494) sought to factor analyze 4 readiness tests in order to determine if a combination of various subtests might be a more efficient predictor of school success. The sample included 35 boys and 31 girls at the end of kindergarten, representing innercity and suburban schools and a range of SES levels. Mean chronological age was 5.6 years; no repeaters were included in the study. The 4 readiness tests used were: 1) *Screening Test of Academic Readiness (STAR)*, 2) *First Grade Screening Test (FGST)*, 3) *Bender Gestalt Test for Young Children (BGT)* and 4) *Metropolitan Readiness Test (MRT)*. The factor analyses included the intercorrelation of all subtests, with principal components having eigenvalues greater than one being extracted and rotated by the varimax procedure. Loadings of all 16 variables were positive, and the factors were rotated through 5 iteration cycles. Three factors were subsequently identified. Factor I was identified as Visual-Perceptual-Motor Function. *BGT* subtests that measured this factor were Copying, Matching, and Numbers and Letters; total scores on the *FGST* indicated secondary loading on this factor. Factor II, Language Comprehension, was assessed by *FGST* subtests of Picture Vocabulary, Word Meaning, Listening, and Relationships. Factor II measures the child's ability to comprehend and to store verbal concepts. Factor III appeared to be a measure of a child's ability to identify and isolate relevant details and was labeled Abstraction of Essential Characteristics. Attentional ability is an important element in Factor III, and this factor was defined by subtests like Picture Completion, Picture Description, and Human Figure Drawing. Examination of the 4 tests indicated that the *BGT* and the *MRT* loaded on Factor I, while the *FGST* loaded on Factor II. The *STAR* was the only test that measured all 3 factors. Aspects of cultural and socioeconomic biases that are built into readiness tests are discussed. Means and standard deviations of all variables, subtest intercorrelations, and factor strengths and loadings are included.

Telegdy (493) examined the effectiveness of 4 readiness tests to predict end-of-first-grade reading achievement. The 4 tests used were the *Screening Test of Academic Readiness* (STAR), the Bender-Gestalt test (BGT), the *First Grade Screening Test* (FGST), and the *Metropolitan Readiness Test* (MRT). Criterion measures at the end of grade 1 were the *Wide Range Achievement Test* (WRAT) and the *Gray Oral Reading Test* (GORT). In addition, the 2 teachers involved were asked to rate each of the 56 children on the 3 skills measured by the WRAT and the 2 skills measured by the GORT. Both the STAR and the MRT were superior to the other predictive measures. The STAR Letters subtest was the best single predictor of all 5 criterion measures.

VI. *Reading of atypical learners*

As part of a 5-year investigation of the syntactic structures used by deaf students, Wilbur and Quigley (538) focused on one syntactic structure area—conjoined structure or deaf children's use of conjunction to form compound/complex sentences. The 450 (M = 225; F = 225) prelingually profoundly deaf students who comprised the sample ranged in age from 10 to 19 years. From a stratified sample of all U.S. deaf education programs enrolling 100 or more students in either day or residential programs, 16 programs are identified, with the selected sample size from each proportionate to the total number of deaf students in the geographical region and to their distribution in day and residential programs. The students were selected from among those who exhibited: 1) sensorineural hearing impairment of not less than 90 dB; 2) an impairment prior to age 2; 3) an IQ of at least 80 on the performance scale of the WISC, WAIS, or some comparable test; and 4) no other disability according to the judgment of school personnel. The *Test of Syntactic Ability* (TSA), consisting of 22 subtests assessing 6 major syntactic areas was administered to all subjects; in addition, a written language sample of at least 50 words was collected to provide some free production in order to confirm test findings. On the tasks related to production of conjoined sentences from 2 separte sentences with some or no elements in common, students' abilities to perform varied with the relationship of the 2 sentences: Forty-six per cent of the 10 year olds successfully combined sentences having no common element, while 18 year olds completed this task correctly 76 per cent of the time. When the 2 stimulus sentences contained identical verb objects (object-object deletion), 10 year olds were able to conjoin correctly only 25 per cent of the time, but this had increased to 68 per cent at age 18. If the 2 stimulus sentences were related to the extent that the object of the first and the subject of the second were identical (object-subject deletion), students at age 10 were correct 44 per cent of the time, increasing slightly to 45 per cent at age 18. The authors concluded that while object-object deletion is reduced with increasing age, object-subject deletion increases with age, the implication being that the deaf student has overgeneralized from other English sentence patterns where identical subjects can be reduced with a grammatical result. Attention is urged to the systematic nature of the students' deletion patterns and the need for instruction and materials to aid in awareness of differences.

Quigley, Smith, and Wilbur (389) examined the development of syntactic structure in the written language of deaf children for the purpose of describing its structure by the techniques of transformational generative grammar. Four hundred and fifty prelingually and profoundly deaf students, 25 males and 25 females in each of 9 age groups ranging from 10 to 18 years, were selected randomly from a stratified sample of 10 residential and 6 day care programs for deaf students in 9 geographical areas. The number of subjects selected in each region was proportionate to the total number of deaf students in the region and to their distribution in day and residential centers. A comparison group of 60 children with normal hearing (M = 10; F = 10 at each age group from 8 to 10) was selected from the third, fourth, and fifth grades of a middleclass public school. The *Test of Syntactic Ability* (TSA) was developed and administered to all students over a 3-month period in order to assess comprehension of relativized structures, to investigate deviant use of relativization commonly found in the written language of deaf individuals, and to determine the extent of elimination of deviant structures over time. Percentage of correct responses by age for deaf and hearing subjects were compared for the processing, embedding, and copying subtests of the TSA. Analysis of variance determined that age differences were statistically significant ($p < .001$) for the deaf subjects, and the linear trend of the data was also significant for the processing and copying tests ($p < .001$). Hearing subjects performed much better on all 3 tests even though they were much younger in age. Results concerning specific problems in syntax revealed 1) the position and function of the relative clause affected its difficulty; 2) with medially embedded relative clauses, students tended to join the Noun Phrase of the relative clause with the Verb Phrase of the main sentence, thus misunderstanding the sentence; 3) when conjoining 2 sentences, students tended to delete coreferential subjects and objects; and 4) the possessive from NP's was accepted by deaf students when the possessive from *whose* was the correct form.

An evaluation of the 16 graduating classes (1956-1971) of the California School for the Deaf (CSDR), was conducted by Balow and Brill (15) to compare achievement of the 590 students as an indicator of program improvement and as an aid to planning and counseling. Variables under investigation included reading and achievement test scores (*Stanford Achievement Test*), years in attendance at CSDR, hearing status of the parents, influence of participation in the John Tracy Clinic preschool program, prediction of college success, and grade point average. In addition, results from the *Wechsler Adult Intelligence Scale* (WAIS) were secured. Graduating classes were compared in 5 groups. In most cases, a one-way analysis of variance was used to test for significance. The Scheffé *post-hoc* tests demonstrated that the 1960-1962 classes were significantly lower in mean IQ, but the other 4 groups were statistically equal. As expected, the 1960-1962 classes showed the lowest average achievement, but they were not significantly below the 1956-1959 classes in paragraph meaning, problem solving, total arithmetic, or total battery score. The 2 groups which were the highest achieving (1966-1968 and 1969-1971) did not differ significantly from each other except in arithmetic computation; but they did achieve significantly higher ($p < .05$) in paragraph meaning, arithmetic computation, and total battery score than the 1956-1959 or the 1960-1962 groups. The effect of years in school was determined by comparing 3 groups of students: Group I, those who had been in attendance 10 to 14 years; Group II, 4 to 9 years; and Group III, one to 3 years. Those students who entered the school during the primary grade years (Group I) scored significantly higher than those who entered in upper elementary or junior high (Group II) on paragraph meaning, on arithmetic computation, and on the total battery; and they scored significantly higher on all measures than those who entered during the high school years (Group III). Deaf children with at least one deaf parent scored significantly higher on IQ and achievement tests than deaf children with hearing parents. When the effect of IQ was covaried, the deaf children with at least one deaf parent still achieved at a significantly higher level ($p < .05$). Deaf children of families who had attended the John Tracy Clinic preschool program scored higher on the total battery than children of families who had not participated. The analysis of covariance showed that a significant difference remained when the effects of IQ were controlled. Although positive correlation coefficients between test scores and college grade point average were found, the relationships, even in multiple correlation, were too low for good prediction.

The *Stanford Achievement Test* (SAT) grade equivalent scores from 16,822 hearing impaired students nationwide were examined by Jensema (237) in order to clarify the influence a specific additional handicap may have on SAT scores. Eleven subgroups were formed, consisting of those who were hearing impaired and who were reported by their schools as having one of 11 specific additional impairments. The 11 additional handicaps considered were epilepsy, cleft lip/palate, severe visual problems, mental retardation, emotional problems, brain damage, perceptual motor problems, cerebral palsy, heart disorders, learning disabilities, and orthopedic disabilities. Mean grade equivalents were calculated for each subgroup for Paragraph Meaning, Spelling, and Arithmetic Concepts subtests. The author concludes that each specific kind of additional handicap exerts a unique degree of influence on academic achievement. Mental retardation appeared to exert the greatest influence on achievement, falling 1.3, 3.0, and 1.8 grade equivalents respectively below the total group on the 3 subtests. The mental retardation group also fell below the other subgroups. The cleft lip/palate subgroup was the only one which had age-adjusted mean scores above the total group in all 3 academic areas.

Reading ability of 132 former pupils of an institution for the deaf was compared by Lane and Baker (277) with findings in other studies of the reading achievement of the deaf. Criteria for selection of the sample included an age range from 9-1 to 16 years and mean composite reading scores on 5 consecutive annually administered *American School Achievement Tests.* Studies in 1962 and 1963 involving 5,307 deaf children in 73 programs in the United States and Canada had reported an average gain in reading grade level from CA 10 to 16 to be 8 months on the *Metropolitan Achievement Tests.* An average reading achievement grade of 3.5 was reported for the 16 year olds. Lane and Baker reported a mean grade equivalent score of 3.3 for the mean chronological age 11-1 and a 5.7 mean grade equivalent score at mean age 15-2, which indicates a gain of 2.4 mean grade equivalent years during the 5-consecutive-year testing program. The researchers suggest that the mean grade level equivalent gain achieved by their subjects compared to difference in grade level equivalent score between the extreme age groups in the earlier study emphasizes that better reading achievement for deaf children is possible, but that a slower than normal rate should be expected.

Forty-eight severely blind children (M = 24; F = 24) from the infant and junior departments of 2 residential schools were tested by Millar (332) to ascertain the effects of tactual and phonological features of Braille consonants on tactually probed recall. Intelligence test scores (*Williams*) and teacher's ratings for the subjects ranged from below average to very superior. Braille reading levels ranged from prereading to fluent. A trail run indicated the number of letters (*i.e.*, set-size) with which the student was able to cope: Allocation of 12 subjects to each set-size for the main test was determined by ability to score above chance but below ceiling level for a given size. Subjects able to cope with set-sizes of 2 and 3, 4, 5, or 6 serial items were tested on probed recall of Braille letters they could either name or discriminate, when the letters were: 1) dissimilar in tactual characteristics and name sounds, 2) similar in feel but different in name sounds, and 3) dissimilar in feel, but similar in name sound. The proprotion of correct responses, subjected to arcsin transformations, were analyzed in a 2-way, set-size by list-type analysis of variance. Type of letter series produced significantly different results for pupils tested under the 4 set-sizes. Recall was significantly impaired for tactually similar compared with dissimilar list-types for all set-sizes except 6. Subjects under set-size 6 (except for subjects able to cope only with a set-size of 4) also showed impaired recall on similar sounding compared with dissimilar sounding lists. Sex differences in verbal and tactual encoding ability could not be assumed from the results.

Sasanuma (430) described behaviorally different decoding strategies of a 43 year old, righthanded Japanese school teacher, who exhibited the syndrome of alexia with transient agraphia as a result of a cerebrovascular accident. A detailed examination of the syndrome revealed that 2 types of Japanese orthographic symbols, kana (syllabic symbols) and kanji (ideographic symbols), were impaired in different manners, *i.e.*, the patient used different strategies to retrieve graph-meaning associations of words written in each type of symbol. The strategy for decoding kana symbols appeared to be one of converting the individual signs into sounds and combining these sounds to form a word, finally arriving at meaning. This method was not effective as an alternate strategy for retrieving kanji words for which a more direct graphic strategy had failed to work. The finding was interpreted to indicate that the processing of kana and kanji represents distinctly different modes of linguistic behavior operation.

Four equated groups of 36 non-reading retarded children (M = 22; F = 14) with mean IQs ranging between 36.3 and 39 were subjects for a replication study by Dorry and Zeaman (117). Each group was taught a simple 8-word reading vocabulary, each under a different experimental condition. In the standard condition, a printed word was repeatedly paired with a pictured representation; in the faded condition, the same procedure was used except that the picture was gradually faded out over trials; in the mixed condition, either word-and-picture or word alone was presented on alternate trials; and in a control condition, alternate trials presented picture alone or word alone. On immediate and delayed tests of vocabulary learning, the faded condition yielded the best results and the control condition the poorest. Subjects in the mixed condition performed less well than those in the faded condition, but better than those in the standard condition. All groups performed poorer on delayed compared with immediate tests. A mixed design analysis of variance indicated significant differences ($p < .005$) among conditions, and between immediate and delayed test performances ($p < .005$). Specific comparisons among the overall means of the 4 conditions were evaluated by *t* tests and by Duncan's Multiple Range Test. These showed each of the condition means to be reliably different from all others at a *p* level of .05. The conclusion favored was that the fading procedure was best because it increased the attention-value of the words in relation to the faded pictures without sacrificing the superior associative effects of non-contingent pairing of words and pictures.

Bilsky, Evans, and Martin (32) examined the relative difficulty of various procedures for training mentally retarded children to discriminate between confusable letters in 2 separate experiments. For Experiment I, 33 male and 23 female retarded adolescents were selected. The CA range was from 120 to 204 months; IQ, as measured for the majority of subjects by the Stanford Binet or Merrill Palmer, ranged from 35 to 67. Equal numbers of subjects were randomly assigned to 2 feedback conditions: a) correction; and b) non-correction. In addition, equal numbers of subjects from each group received each of 4 task format conditions involving letters *b* and *d*: a) 4-choice matching to sample (selecting the same letter as the model), b) 2-choice matching to sample, c) 4-choice oddity (selecting the different letter without model); and d) 2-choice discrimination. Analysis of variance (2 × 4 factorial) revealed no significant differences among groups for CA or IQ as a function of random assignment to treatment groups. Procedure consisted of 2 stages: 1) training, in which each group followed its particular feedback-task format condition; and 2) transfer, in which all groups were treated similarly. For the correction condition, the stimulus frame of the program advanced only after a correct response. For the non-correction condition, the stimulus frame advanced after each correct or incorrect response. Data were anlayzed according to trials-to-criterion during training and total number of correct responses on the transfer task. A 2 × 3 analysis of variance (eliminating correction-2-choice-discrimination and non-correction-2-choice-discrimination) revealed no main interaction effects. A 2 × 4 square analysis, employed to compare the number of subjects who had attained the learning criterion for the 4 task-format conditions, was significant at the .05 level. Application of a simultaneous confidence interval technique revealed that performance in the 2-choice discrimination differed from each of the others. No other significant differences were found. A 2 × 4 analysis of variance on transfer total correct scores revealed no main nor interaction effects. For Experiment II, the subjects were 31 male and 21 female educable mentally retarded children selected from primary and preprimary classes in New York City public schools. Chronological ages ranged from 81 to 145 months, with an IQ range from 50 to 75 as measured by the WISC or the Stanford-Binet. Experiment II employed a 2 × 2 factorial design with 2 levels of problem types (simultaneous vs. delayed matching to sample) and 2 levels of sample redundancy (sample redundant vs. nonredundant). Procedure consisted of 2 stages: 1) training, in which each group followed its particular problem type-sample redundant condition; and 2) transfer, in which all groups were treated similarly. Data were analyzed according to errors committed during training and errors committed on the delayed matching to sample transfer task. A 2 × 2 analysis of variance indicated that the group receiving the simultaneous matching task performed significantly better than the group performing the delayed matching task. Neither the main effect of sample redundancy nor the interaction effect was significant. A 2 × 2 analysis of variance for transfer task raw error scores revealed no significant main or interaction effects.

Glicking and Joiner (170) investigated the interactions of a sensorimotor ability factor (auditory) and a personality variable (level of aspiration) in the prediction of individual differences in performance of 49 institutionalized mentally retarded subjects on the *Spache Diagnostic Reading Scales*. The mean CA for the 22 female subjects was 17.5 with a mean IQ of 49.7, as measured by the WISC. The mean CA for the 27 male subjects was 17.6 and the mean IQ, 53.8. A battery of 34 sensorimotor tests (the *Kinesio-Perceptual Test II*), including the Auditory Factor I subtest, was administered to each subject. Standard scores and standard deviations were calculated. In addition, raw scores were compiled from the *Diagnostic Reading*

Scales and the WISC coding task was selected and modified to serve as a measure of aspiration. Multiple linear regression was the principal means of data analysis. It was hypothesized that the interaction effects of level of aspiration and Auditory Factor I scores would significantly predict reading subtest scores over and above the separate additive effects of the same variables. The differences between the full and restricted models were significant for 8 of the 9 reading subtests: Only the sound blending subtest failed to be significantly affected by the interaction of the 2 predictor variables. Mentally retarded subjects scoring high in auditory ability performed best on the reading criteria under the condition of "realistic" aspiration and performed poorest when aspiration scores indicated larger positive and negative discrepancy between aspired performance and attained performance. For subjects with low auditory scores, positive discrepancy scores (the subject indicated he would be able to do better than he actually did) were associated with better performance on all 9 reading criteria. Even though mean reading test scores for high auditory ability subjects were always greater than low auditory subjects, when interaction effects were considered, low auditory ability subjects outperformed high auditory ability subjects who exhibited positive or negative discrepancy scores in level of aspiration.

Malone and Christian (309) examined the utility of the *Adaptive Behavior Scale* (ABS) as an additional tool for placement of mentally retarded children and adolescents into a 4-level special education program. Levels ranged from Developmental (basic self-help and academic skills) to Intermediate 2, a level comparable to secondary school Educable Mentally Retarded classes. A further purpose of the study was to consider the use of ABS scores for computerized assignment of training levels. Subjects were 126 mentally retarded students (Male = 73; Female = 53), ranging in age from 5 to 23 years, enrolled in special education classes at a state hospital in Georgia. Range of IQ scores was from 25 to 84, as measured by Stanford-Binet, WISC or WAIS. Questions from the ABS, Part I, designed to measure skills related to maintenance of independence in daily living, were divided into 23 subdomains. A percentage score for each subdomain was obtained for each subject by comparing the number of skills acquired to the total number of skills in each subdomain. Comparisons were made between ABS subdomain percentage scores and total score with results on the *Wide Range Achievement Test* (WRAT) and obtained IQ scores for each of the 4 levels on the special education program. Significant Pearson product-moment coefficients ($p < .001$) were obtained between ABS total scores and IQ. Small to moderate coefficients of correlation ($p < .05$) were obtained between WRAT subtest standard scores and IQ. No significant coefficient was found between ABS total scores and WRAT subtest scores. Analyses of variance applied to scores from the 3 measures indicated that each successfully differentiated between the 4 training levels. There was a significant difference ($p < .001$) between levels as a function of both the subjects' ABS total score and ABS mean subdomain percentage scores for each training level. Subsequent *t*-tests were performed to investigate specific between-level differences provided by each measure. For 5 of the 6 possible 2-level comparisons, ABS mean subdomain percentage scores provided significant differentiation. The significant relationship between ABS and IQ scores indicated to the investigators that the ABS is a valuable additional screening measure which can provide for more objective placement of retarded individuals in special education training levels.

Richardson, Oestereicher, Bialer, and Winsberg (399) examined the effectiveness of an experimental phonics program, A Direct Approach to Decoding (DAD), for teaching 19 retarded children beginning reading skills. Two special school classes (N = 12 and 7) of both sexes, judged by the school staff to have made little or no progress in reading despite concerted teaching efforts, were given small group instruction for periods of 15 to 20 minutes 4 days per week for 2 semesters. The *Phonics Skills Test* (PST), a criterion-referenced instrument designed to measure mastery of content taught and generalization of skills to novel content, was administered during the first and last month of the school year. Effectiveness of the instructional procedure was assessed by pretest-post test comparisons of total scores on the PST, both in terms of individual children and relative to class means. Results of a *t*-test evaluation of gains indicated both classes made significant pretest-post test gains. All children showed pre-post increments and both classes achieved competence in skill generalization tasks. The authors concluded that the experimental program offers an effective method for teachers of disabled learners to impart decoding skills.

Sabatino and Dorfman (426) attempted to determine if children grouped according to their performance on perceptual aptitude tests would made significant academic achievement gains when commercial curricular materials were matched to the perceptual modality of greater measured strength. Seven classes for educable mentally retarded children were randomly selected from 43 such classes in 7 counties in rural central Pennsylvania. Following a screening for gross deficits of 116 children from 6 classes, the Beery-Buktenica *Developmental Test of Visual-Motor Integration* (DTVMI) and the auditory recognition subtest of the *Test of Auditory Perception* (TAP) were administered to 93 children. Two treatment groups were established within each classroom. Each group contained 10 audile, 13 non-preference, and 13 and 18 visile subjects, respectively, randomly assigned on the basis of IQ scores, sex, and perceptual modality information. An audile learner (auditory perceptual strength) was operationally defined as having a TAP score one standard deviation plus the standard error of measurement above the group mean and a DTVMI score one standard deviation plus the standard error of measurement below the mean. The reverse of the same procedures was employed to determine visile learners. Subjects not demonstrating definite perceptual modality strengths were designated non-preference. Seventy-seven children received treatment one-half hour daily for 12 weeks with a predominantly visual curriculum material (Sullivan Programmed Reading Series) or a concentrated auditory perceptual approach (DISTAR). A 13-subject control group distributed throughout the classes constituted a control group which received no specialized intervention. Data were treated by analysis of variance procedures using a 2 × 3 design to isolate aptitude by treatment interactions. Reading and spelling subtest pretest and post test scores from the *Peabody Individualized Achievement Test*, as well as an author-constructed criterion referenced word recognition test, were treated using repeated measures. Absence of significant aptitude by treatment interaction indicated that neither visile nor auditory subjects showed academic gains over the other modality group after receiving appropriate intervention. Neither did evidence support the hypothesis that non-preference subject groups would fail to show significant growth in either curriculum. Both the audile and non-preference groups evidenced significant growth ($p < .01$) over the visile subjects on the word recognition task for the visual intervention. The authors' explanation for non-significant findings included the lack of reliability for tests used to classify aptitudinal strengths or weaknesses.

Gardner (167) examined the capacity of hospital patients with general linguistic disorders (aphasic) and patients with a clinically diagnosed asymbolia (alexia) to name and recognize symbolic materials. Forty male subjects were diagnosed as aphasic: 15 had focal lesions restricted to the anterior (frontal lobe) region of the dominant hemisphere; 15 had focal lesions restricted to the posterior lobe; and 10 were global aphasics (damage to both regions). In addition, 10 normal control patients and 15 brain-damaged control patients with no discernible language difficulties took the test. All patients were of comparable age (median = 52), educational, and socioeconomic background. Six patients clinically diagnosed as alexics took part one of the test; 5 of these took both parts. The 66-item symbol test consisted of 11 categories including numbers, letters, colors, and animals, as well as punctuation marks, faces, and printed words. Each subject was given a naming score, the number of symbols correctly identified in both parts of the test during a 30-second period. Analysis of variance yielded a significant difference ($p < .01$) among the 4 subject groups (normal, brain damaged, anterior aphasics, and posterior aphasics). A Scheffé *post hoc* comparison between all pairs of means revealed a significant difference ($p < .05$) between the scores of the aphasics and the control groups, with anterior and posterior aphasics performing significantly poorer than brain-damaged and normal controls. There was no significant difference between anterior and posterior aphasic groups. Although alexic patients were not included in the analysis because of the small sample, they appeared to experience equal or greater difficulty in naming written symbols than other asphasics with focal lesions. Each subject's recognition score was based on the number of symbols identified either during the 30-second naming period or from proffered multiple choice alternatives. Again, significance of difference ($p < .01$) obtained among the 4 subject groups was followed by *post hoc* comparison. While posterior patients scored significantly poorer on recognition, there was no significant difference among the other 3 groups. When the category "Face" identification was removed from analysis, the anterior aphasics made significantly more errors that did the brain-damaged controls. Poorer performance seemed to reflect the size rather than the placement of the lesion. The relative difficulty of the various symbolic categories was consistent across all subject groups except the alexic subjects. Findings demonstrated that although visual and language processes were intact, the connection between them is non-functional. The author cautioned against the false division of visual elements into those which can be read and those which are named. Those symbols which cause association in a number of modalities appeared to be more easily recognized by alexics.

The "adaptation effect," defined as the reduction of the frequency of stuttering moments during successive attempts at oral reading and at spontaneous speech, was investigated by Kroll and Hood (272). Ten male stutterers between the ages of 15 and 30 were tested at 3 speech and hearing clinics in the Midwest. Each subject read a 100-word passage 5 times in succession and described a stimulus picture 5 times. Stuttering moments were analyzed from both molar (fluency disruption treated globally) and molecular (specific disfluency types tabulated) frames of reference. Friedman 2-way analyses of variance were used to test for adaptation in both experimental conditions. The molar analysis revealed adaptation had occurred in reading but not in spontaneous speech. The molecular analysis showed that the specific disfluency form-types comprising the global moments of stuttering all showed downward trends in their frequencies of occurrence during massed oral reading trials. However, only the categories of the word repetition and tense pause showed statistically significant adaptation in reading. The molecular analysis revealed no such downward or significant trends in spontaneous speech.

Poppel and Shattuck (380) compared the reading ability of 12 Korean War veterans who had suffered brain lesions and alterations of their visual field with 10 male brain-injured veterans who showed no alteration of visual field in order to ascertain the extent to which peripheral visual field information on the right side (the reading direction) is essential for the efficient reading. Each subject was asked to read 56 sentences aloud. The first group of 7 sentences was typed in normal fashion. The remaining 7 groups of 7 sentences were typed in different directions, radiating straight out from the center of each page. Reading times for each sentence group in one direction were averaged to yield a single mean for each patient. Friedman 2-way analysis of variance indicated reading direction was an essential factor in effect on reading time. Regardless of the direction of the typed material, patients with visual field alterations took approximately twice as long to read each group of sentences than the control group, even though no patient had complained of reading difficulty. The data from the group with visual problems were reanalyzed to determine whether patients whose eye movements were toward a blind area took more time to read the sentences. No significant differences were found. Reading times were not differentially affected when patients were reading toward their blind area.

A study of factors influencing the reading ability of a pair of identical 6-year-old schizophrenic twins was undertaken by Browning (59). IQ scores for the twins as measured by the Stanford-Binet were 68 for Twin A and 65 for Twin B. The institutional classroom was used as the setting for teaching preprimer and primer word cards to the twins in timed conditions in both group and individual situations. Three new words were presented daily with 3 different measurements taken of learning rate: 1) correct and error rates; 2) number of words "learned," *i.e.*, recognized for 3 consecutive days; and 3) average per cent of correct responses for each phase of the study. The phases of the study included: 1) baseline, in which the twins were taught individually and then grouped while being taught different words; 2) Phase I, in which a divider was placed between them during group sessions and beside them during individual instruction; and 3) Phase II, in which they were rewarded for making no errors on review words. Regardless of phase changes, both twins had highest correct percentages when taught individually. Twin A had a higher per cent correct when reinforcement was used; however, no appreciable gains were achieved as a result of the divider or reinforcement. Twin A learned 19 words during individual sessions and 14 words when grouped. Twin B learned 24 words in individual sessions versus 18 words in group. Acceleration and deceleration rates for correct and error scores were computed for each phase of the study using the Lindsley rate finder. These slopes indicated that although average correct scores and number of words learned were higher when taught individually, rates of acceleration were higher when the twins were taught as a group. The rate of acceleration for both was highest when reinforcement was used in the group setting. The author uses the conflicting data to substantiate the usefulness of various methods of data collection.

Sloan, Habel, and Feiock (462) studied changes in reading acuity with a high-intensity reading lamp among patients with macular disease. Brief data included for 50 adult patients examined at the Low-Vision Clinic at Johns Hopkins University. Part I reports the basic case studies showing the types of central field disorders in each eye and the changes in acuity with Log I millilamberts of luminance. Each case differs in type of disease, amount of remaining acuity, type of treatments being given, and the magnifiers in use. Part II, entitled Clinical Application, described the test procedure as well as some findings. The high intensity lamp can be brought within a few inches of the reading materials. Testing was done at 40 centimeters, using the Sloan capital letter chart and continuous text of different type size called the *Sloan M* cards. Tests were made in room illumination (about 10 mL) and with high illumination (up to 350 or 400 mL). Tests of acuity for those who improved with high illumination were made to determine the most appropriate strength of the reading aids (magnifiers) to produce maximal M units. The data indicated that subjects who, in bright light, read 4M or better, found high intensity reading lamps useful. Those subjects who improved in bright light to 5M or poorer had difficulty with use of the high intensity light and required sufficient manification to permit them to read in ordinary light. Only 10 subjects were examined on 2 or more dates. Some subjects showed decreasing benefits of high illumination with time while others improved.

Wooster (552) studied the comparative effects of formal versus informal school situations on personal responsibility and reading achievement of educationally subnormal boys. Two groups of 20 boys were chosen from 2 schools representing extremes on a formal-informal dimension. The *Intellectual Achievement Questionnaire*, a 34-item instrument designed to assess beliefs in internal as opposed to external responsibility for reinforcement, and a group reading test (unidentified) were administered. Boys in informal schools scored higher on the reading test and also showed greater acceptance of responsibility for academic achievement.

Annotated bibliography[1]

1. **AARON, ROBERT L., & MUENCH, SALLY.** Behaviorally disordered adolescents' perceptions of adult authority figures after treatment using a taxonomy of comprehension skills. *Reading Research Quarterly*, 1974-1975, *10(3)*, 228-243. (IV-14).

   Compares pre- and post-semantic differentials from adolescents with behavior problems in order to investigate the effects of comprehension training on assessment of adults presented in stories. Subjects were 14 males randomly assigned to the structured or unstructured discussion groups.

2. **AARONSON, SHIRLEY.** The use of a student-designed cloze procedure as a vocabulary tool. In Phil L. Nacke (Ed.) Programs and practices for college reading. *Twenty-second Yearbook of the National Reading Conference*, 1973, 2. Pp. 1-6. (V-8)

   Tests and compares 30 students' responses to a student-designed cloze vocabulary test and a teacher-designed test after training in vocabulary cloze deletions.

3. **ABRAMSON, THEODORE, & KAGEN, EDWARD.** Familiarization of content and different response modes in programmed instruction. *Journal of Educational Psychology*, February 1975, 67, 83-88. (V-8)

   Analyzes the relationships among varied post tests of technical material presented in programed versus standard format to naive versus experimentally sophisticated subjects, who included 30 females and 30 males recruited from graduate courses in educational research.

4. **AGIN, AVIS P.** An overview of recent research in reading. *Elementary English*, March 1975, 52, 370-375. (I-1)

   Selects articles in journals directed toward and read most frequently by teachers in order to describe findings in several areas of reading research.

5. **AHMANN, J. STANLEY.** Assessing national levels of achievement in a systematic manner. *Educational Horizons*, Summer 1974, 52, 179-183. (III-7)

   Reports selective findings from a national assessment of children through young adults of achievement on reading and demonstrated performance in reading, writing, literature, science, music, social studies, and citizenship.

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[1] Numbers have been assigned to major headings and subheadings in the first part of the summary as cross reference aids. At the end of each item in this *Annotated bibliography*, a number in parentheses shows the classification under which the item is discussed.

6. **ALLEN, SUE.** Predicting reader interest in anthropology column. *Journalism Quarterly*, Spring 1975, *52*, 124-128. (III-4)

   Measures the level of reader interest in a syndicated column on anthropology. A systematic clustered probability sample of 256 interviewees rated 18 column titles and subtitles, including 6 representing anthropology.

7. **ALLINGTON, RICHARD.** Cue selection and discrimination learning. *Academic Therapy*, Spring 1975, *10*, 339-343. (I-3)

   Discusses implications of several studies of letter discrimination for beginning reading, focusing on use of color cues. The study involved 102 kindergarteners.

8. **ALPERT, JUDITH LANDON.** Teacher behavior across ability groups: a consideration of the mediation of Pygmalion effects. *Journal of Educational Psychology*, June 1974, *66*, 348-353. (II)

   Compares frequency of good teacher behaviors as defined by experts observed in top and bottom reading groups. Subjects were 15 second grade teachers in Catholic schools.

9. **AMBROSINO, ROBERT J.; BRADING, PAUL L.; NOVAL, LORRAINE K.** Reading: a potential source of academic difficulty in medical school. *Journal of Reading Behavior*, December 1974, *6*, 367-373. (V-8)

   Reports mean, standard deviation, and distribution of reading achievement scores of 268 students entering medical school. Uses norms from selected groups of professionals; follows up low scorers' academic progress.

10. **ANDERSON, FENWICK.** Inadequate to prevent the present: the *American Mercury* at 50. *Journalism Quarterly*, Summer 1974, *51*, 297-302, 382. (III-8)

    Describes one magazine's shift in orientation from the left to the right concomitant with changes in ownership and editors.

11. **ANDERSON, JOHN F., & BERDIE, DOUGLAS R.** Effects on response rates of formal and informal questionnaire follow-up techniques. *Journal of Applied Psychology*, April 1975, *60*, 255-257. (III-17)

    Assesses response rates to humorous and formal, hand and typed addressed followups of a questionnaire regarding graduate assistants. The questionnaire was mailed to administrators (N=210), faculty members (N=344), graduate assistants (N=2,288), and undergraduates (N=785).

12. **ANDERSON, THOMAS H.** Cloze measures as indices of achievement comprehension when learning from extended prose. *Journal of Educational Measurement*, Summer 1974, *11*, 83-92. (IV-5)

Tests the hypothesis that cloze measures are a function of achievement, affected by intelligence, sensitive to instruction, and subject to principles of learning and forgetting. Subjects were 218 college juniors and seniors taking an educational psychology course.

13. **ANDERSON, WILLIAM W.** Evaluation of college reading and study skills programs problems and approaches. *Reading World*, March 1975, *14*, 191-197. (I-8)

Synthesizes recent research relating to problems evaluating the effectiveness of college reading and study skills programs.

14. **ATKIN, CHARLES.** Instrumental utilities and information seeking. In Peter Clarke (Ed.) *New models for mass communication research. Sage annual reviews of communication research, Vol. II.* Beverly Hills: Sage Publications, 1973. Pp. 205-242. (I-10)

Presents a model of the message selection process for solving practical problems. Reports a series of surveys of public opinion in relation to newspaper reading and other mass media use and analyzes findings in terms of the model.

15. **BALOW, IRVING, H., & BRILL, RICHARD G.** An evaluation of reading and academic achievement levels of 16 graduating classes of the California School for the Deaf, Riverside. *The Volta Review*, April 1975, 77, 255-266. (VI)

Assesses improvement in the educational program of a school for the deaf through measured achievement of graduating classes over a 16-year period, analyzed by IQ, attendance in a preschool program, and parental hearing problems.

16. **BALYEAT, RALPH, & NORMAN, DOUGLAS.** LEA-cloze—comprehension test. *The Reading Teacher*, March 1975, 28, 555-560. (V-10)

Reports results of a project to facilitate individualized instruction by teaching teachers to utilize cloze tests developed from children's productions. Correlates cloze tests and standardized reading achievement scores from 48 second and 44 fifth graders.

17. **BARGANZ, ROBERT A.** Phonological and orthographic relationships to reading performance. *Visible Language*, Spring 1974, *8*, 101-122. (IV-13)

Investigates the abilities of 40 fifth grade good readers and 40 fifth grade poor readers to recognize the form of derived words where morphophonemic alternation occurs but orthographic constancy exists.

18. **Barghouti, Shawki** M. The role of communication in Jordan's rural development. *Journalism Quarterly*, Fall 1974, *51*, 418-424. (III-1)

    Analyzes content of a newspaper and of radio and television programs and interviews 302 randomly selected farmers to investigate the contribution of mass media to farmers' knowledge about political and agricultural issues.

19. **Barr, Rebecca.** How children are taught to read: grouping and pacing. *School Review*, May 1975, *83*, 479-498. (V-10)

    Describes teachers' grouping and pacing of initial reading instruction and standardized reading achievement at the end of first grade. A total of 350 children in 12 classes in 4 schools participated.

20. **Barr, Rebecca** C. Instructional pace differences and their effect on reading acquisition. *Reading Research Quarterly*, 1973-1974, *9(4)*, 526-554. (V-5)

    Describes a series of studies on the effect of homogeneous and differential pacing of classes on basal word learning and general reading achievement. Subjects were randomly selected from first grades in 7 schools.

21. **Barr, Rebecca.** Processes underlying the learning of printed words. *The Elementary School Journal*, January 1975, *75*, 258-268. (I-3)

    Reviews and synthesizes research related to strategies used in identifying words.

22. **Barron, Roderick** W., & **Pittenger, John** B. The effect of orthographic structure and lexical meaning on "same-different" judgments. *Quarterly Journal of Experimental Psychology*, November 1974, *26*, 566-581. (IV-5)

    Relates models of word perception and reading to experimental results of tachistoscopically presented pairs of 5-letter words, pseudowords, and non-words to 8 paid subjects for same/different judgments.

23. **Bart, William** M. Adolescents' understanding of logical connectives. *Psychological Reports*, August 1974, *35*, 41-42. (IV-8)

    Assesses the relative reading comprehension of disjunctive versus conjunctive concepts, concepts with implications versus disjunctive and conjunctive concepts, and negative versus affirmative sentences using a 24-item test. Subjects were 171 urban high school students.

24. **Barter, Alice.** An analysis of the relationship between student performance on the National Teachers Examination and

that on the Cooperative English Test, Form 1B, Reading. *Educational and Psychological Measurement,* Summer 1974, 34 375-378. (II)

Discusses intercorrelations among ethnicity, reading course grade, cumulative GPA, and total and subtest scores on a standardized reading test and the NTE for 27 black and 3 white student teachers.

25. **BAXTER, LESLIE A. & BITTNER, JOHN R.** High school and college student perceptions of media credibility. *Journalism Quarterly,* Autumn 1974, *51,* 517-520. (III-1)

Reports per cent of political candidates' use of print (including direct mail and posters) and other media to evaluate effectiveness of campaign spending.

26. **BEATTY, JAMES R.** The analysis of an instrument for screening learning disabilities. *Journal of Learning Disabilities,* March 1975, *8,* 180-186. (IV-13)

Reports the factor structure of a classroom behavioral checklist using data collected on 400 teacher-identified, learning disabled first, second, and third graders. Compares reliabilities obtained on this and another sample of 100 children, 61 of whom were identified as learning disabled.

27. **BECK, MICHAEL D.** Achievement test reliability as a function of pupil-response procedures. *Journal of Educational Measurement,* Summer 1974, *11,* 109-114. (V-12)

Compares means and reliabilities on a standardized achievement test from third and fourth graders, half answering directly in the booklet, half using separate answer sheets. Over 4,000 subjects took part from various geographical locations representative of the national school populations.

28. **BELL, ANNE E.; SWITZER, FRED; & ZIPURSKY, MYRNA A.** Open-area education: an advantage or disadvantage for beginners. *Perceptual & Motor Skills,* August 1974, *39,* 407-416. (V-10)

Compares preschool test results and first grade reading achievement of 112 children in a traditional school with that of 57 children in an open-area school in the same suburban area.

29. **BENENSON, THEA FUCHS.** Prediction of first-grade reading achievement: criterion validation of a measure of visual recognition memory. *Educational and Psychological Measurement,* Summer 1974, *34,* 423-427. (IV-6)

Uses stepwise multiple regression technique to assess effectiveness of short and long term visual memory for form, orientation, and sequence with readiness tests in predicting first grade reading achievement. Subjects were 105 boys and 87 girls in a white, upper middleclass surburban community.

30. **Berger, Allen.** The IEA reading study: a review. *Research in the Teaching of English*, Spring 1974, *8*, 27-39. (I-12)

Reviews Robert L. Thorndike's *Reading Comprehension Education in Fifteen Countries: An Empirical Study.* New York: John Wiley and Sons, A Halsted Press Book, 1973.

31. **Berger, M.; Yule, W.; & Rutter, M.** Attainment and adjustment in two geographical areas: II—The prevalence of specific reading retardation. *British Journal of Psychiatry*, June 1975, *126*, 510-519. (IV-13)

Compares rates of specific reading retardation and general reading backwardness in 10 year olds living in a metropolitan area and in an area of small towns. A total of 400 subjects was included.

32. **Bilsky, Linda H.; Evans, Ross A.; & Martin, Paula.** Relative effectiveness of various letter discrimination procedures in directionality pretraining. *American Journal of Mental Deficiency*, January 1975, *79*, 359-366. (VI)

Investigates feedback, task format, problem type, and redundancy in teaching 56 institutionalized, mentally retarded adolescents and 52 educable, mentally retarded primary school children to discriminate confusable letters.

33. **Binkley, M. Edward; Maggart, William; & Vandever, Thomas R.** Reading retardation and Bender Gestalt performance. *Psychology in the Schools*, October 1974, *11*, 400-402. (IV-6)

Performs discriminant analysis of 2 reading tests and one personality test on 42 poor readers in seventh grade, 26 with low and 16 with adequate Bender Gestalt scores.

34. **Bissell, Joan S.** Planned variation in Head Start and Follow Through. In Julian C. Stanley (Ed.) *Compensatory education for children, ages 2 to 8.* Baltimore: The Johns Hopkins University Press, 1973. Pp. 63-107. (I-3)

Describes 8 models of Head Start and 14 models of Follow Through programs. Discusses selected findings from many evaluations grouped by measures of parents, children, and teachers.

35. **Black, F. William.** Self-concept as related to achievement and age in learning-disabled children. *Child Development*, December 1974, *45*, 1137-1140. (IV-14)

Compares mean self concept scores of 25 normal and 25 retarded readers selected from a population of school identified children with learning problems. Pupils were matched on IQ, grade, age, and sex.

36. Black, Frank S., & Bargar, Robert R. Relating pupil mobility and reading achievement. *The Reading Teacher*, January 1975, *28*, 370-374. (IV-15)

    Assesses relationships among mobility, sex, and reading achievement for 208 sixth graders in 7 high mobility/low income schools.

37. Blaiwes, Arthur S. Formats for presenting procedural instructions. *Journal of Applied Psychology*, December 1974, *59*, 683-686. (IV-5)

    Uses accuracy of following instructions to assess effects of 3 different formats (short sentences, logical tree, and coding) on completing tasks of varying difficulty. Subjects were 30 paid male college students.

38. Blank, Marion; Berenzweig, Susan S,; & Bridger, Wagner H. The effects of stimulus complexity and sensory modality on reaction time in normal and retarded readers. *Child Development*, March 1975, *46*, 133-140. (IV-4)

    Reports 3 experiments comparing poor and normal readers on absolute reaction time to simple and complex visual and auditory stimulus onset, and on shifts in reaction time with shifts within and across modalities. A total of 48 normal and 48 poor readers in third grade participated.

39. Bloch, Maurice. Astrology and writing in Madagascar. In Jack Goody (Ed.) *Literacy in traditional society*. Cambridge, England: The University Press, 1968. Pp. 278-297. (III-7)

    Examines the role of literacy in the East African state of Merina in Madagascar.

40. Blumenfeld, Warren S.; Black, William R.; & Morris, Sharon L. Interrater reliability of the Gunning readability index: methodological note. *Perceptual and Motor Skills*, June 1975, *40*, 902. (V-9)

    Reports the correlation between 2 raters using the same readability index on the same texts.

41. Blumenfeld, Warren S., & Justice, Barry M. Six replicated investigations of the relationship between Flesch and Gunning readability indices. *Perceptual and Motor Skills*, February 1975, *40*, 110. (V-9)

    Reports correlations between 2 methods of estimating readability on the same texts by the same rater.

42. **Bobrow, Davis B.** Mass communication and the political system. In W. Phillips Davison & Frederick T. C. Yu (Eds.) *Mass communication research: major issues and future directions.* New York: Praeger, 1974. Pp. 93-121. (I-10)

    Presents an overview of empirical relationships between mass communication and characteristics of the political process and its consequences, focusing particularly on questions such as the desirable degree of press freedom and government regulations.

43. **Bogart, Leo.** The management of mass media. In W. Phillips Davison & Frederick T. C. Yu (Eds.) *Mass communication research: major issues and future directions.* New York: Praeger, 1974. Pp. 143-170. (I-10)

    Reviews research on existing sources of information in the context of management functions in coping with public, advertiser, and governmental pressures and the management of new technology. Presents policy research questions and research strategies.

44. **Bomboy, Robert P.** *Major newspaper coverage of drug issues.* Washington, D.C.: The Drug Abuse Council, 1974. (III-9)

    Presents highlights of findings from interviews of 39 journalists in 14 states on the role newspapers play in educating readers or perpetuating misconceptions about drug abuse.

45. **Borden, Juliet P.; Handley, Herbert M.; & Wollenberg, John P.** Head-Start can contribute to reading. *Elementary English*, September 1974, *51*, 874-876. (I-3)

    Discusses findings of a state of Mississippi study of the effectiveness of a preschool intervention program on achievement. Evaluations were made after the first and second year of the Follow Through program.

46. **Borden, Juliet P.; Wollenberg, John P.; & Handley, Herbert M.** Extended positive effects of a comprehensive Head Start—Follow Through program sequence on academic performance of rural disadvantaged students. *The Journal of Negro Education*, Spring 1975, *44*, 149-160. (V-4)

    Analyzes reading, arithmetic, spelling, and IQ scores by sex and Head Start (N=99) versus non-Head Start (N=67) participation of rural disadvantaged children at termination of first and second grades in a Follow Through program.

47. **Born, David G., & Davis, Michael L.** Amount and distribution of study in a personalized instruction course and in a lecture course. *Journal of Applied Behavior Analysis*, Fall 1974, *7*, 365-375. (V-8)

Compares exam grades and amount of time that course materials were checked out for introductory psychology which was taught traditionally and through a personalized system of instruction. Subjects included 94 students.

48. **Bradfield, Robert H.; Hilliard, A.; Palmer, B.; Jones, L.; Wofford, J.; Gray, B.** Project B.E.A.M.: an experiment in intervention. *The Journal of Negro Education*, Winter 1975, *44*, 34-41. (V-6)

    Describes a tutoring, counseling, and cultural activity program using token reinforcement (money) with delinquent and predelinquent urban minority seventh and eighth graders. Reports changes in reading achievement, probationary status, and attitudes and behavior rated by school personnel on 70 of the children.

49. **Bradley, Estelle.** Screen them early! *Academic Therapy*, Spring 1975, *10*, 305-308. (V-4)

    Compares pre- and post-kindergarten tests of readiness from 3 groups: 804 children in regular kindergarten (controls), 435 whose teachers received test information, and 406 who received special services.

50. **Brasch, Ila Wales, & Brasch, Walter Milton.** *A comprehensive annotated bibliography of American black English.* Baton Rouge: Louisiana State University Press, 1974. (I-11)

    Lists over 2,000 references on black English in alphabetical order. Annotates approximately 80 per cent of them. Includes unpublished dissertations, popular and profession articles, and literary works.

51. **Brekke, Beverly W., & Williams, John D.** Conservation as a predictor of reading achievement. *Perceptual and Motor Skills*, February 1975, *40*, 95-98. (V-4)

    Assesses tests of reading readiness, intelligence, and conservation as predictors of reading achievement 7 months later. Subjects were 72 first graders.

52. **Brekke, Beverly, & Williams, John D.** Teachers' prediction of reading readiness. *Perceptual and Motor Skills*, October 1973, *37*, 521-522. (II)

    Appraises the efficiency of teachers' readiness predictions by having 2 kindergarten teachers predict readiness of 63 children and then by measuring the readiness of the children one year later with a battery of standardized tests.

53. **Brekke, Beverly W.; Williams, John D.; & Harlow, Steven D.** Conservation and reading readiness. *Journal of Genetic Psychology*, September 1973, *123*, 133-138. (V-4)

Correlates 5 measures of conservation with measures of readiness and intelligence of 81 first graders in order to ascertain the ability of conservation as a predictor of reading success.

54. **Briggs, Chari, & Elkind, David.** Cognitive development in early readers. *Developmental Psychology*, September 1973, *9*, 279-280. (V-3)

Compares test results and parent interviews of 32 five year olds (16 of whom were early readers and 16 of whom were non-readers) in order to determine if learning to read English is facilitated by what Piaget calls concrete operations.

55. **Bristol, Marie M., & Sloane, Howard N., Jr.** Effects of contingency contracting on study rate and test performance. *Journal of Applied Behavior Analysis*, Summer 1974, *7*, 271-285. (V-8)

Compares matched experimental and control groups on study time and course exams as a function of study habits, contracts, and self-report of time spent studying. Subjects were 36 introductory psychology students.

56. **Brockman, Lois M.** The reading factor in measuring security in children. *The Alberta Journal of Educational Research*, September 1974, *20*, 244-250. (IV-14)

Investigates the influence of reading comprehension on security. Experimental subjects were 25 grade 4 to 8 boys diagnosed as emotionally disturbed and 25 matched controls rated secure by their teachers.

57. **Brooks, William D.** What are they reading? *Contemporary Education*, Winter 1975, *46*, 131-133. (II)

Categorizes 258 weekly reports on course related extra-curricular reading solicited from educational methods students.

58. **Brown, Lester E., & Cook, Ellen.** How children's interests affect their critical thinking ability. *Educational Leadership*, February 1975, *32*, 339-342. (IV-16)

Analyzes relationships of 2 critical thinking skills to children's sex, interests, abilities, and to the sexual orientation of the material read. Subjects were 34 male and 34 female second graders.

59. **Browning, Ellen R.** Factors influencing reading ability with schizophrenic twins in group vs. individual teaching. *Reading Improvement*, Spring 1974, *11*, 9-16. (VI)

Assesses the effectiveness of different methods of teaching reading with a pair of 6-year-old schizophrenic twins possessing similar learning problems.

60. **BUFFMIRE, JUDY ANN.** The Stratistician model. In Evelyn N. Deno (Ed.) *Instructional alternatives for exceptional children*. Minneapolis. U. of Minn., January 1973. Pp. 3-10. (V-11).

Reports first year findings of a statewide program using a combination strategist-diagnostician for learning of handicapped children. Includes amount and type of teacher and student contacts, ages of children referred, and type of problems and recommendations.

61. **BURGETT, RUSSELL.** Teacher aide: impact on reading deficits. *The Minnesota Reading Quarterly*, February 1975, *19*, 112-114. (V-11)

Compares pre- and post-reading achievement of 44 first through fourth graders reading below their listening potential. Subjects were divided into 3 groups and given varying amounts of teacher aide services.

62. **BURNS, EDWARD.** An evaluation of the Peabody Individual Achievement Test with primary age retarded children. *Psychology in the Schools*, January 1975, *12*, 11-14. (V-12)

Discusses convergent and discriminant validity of a new brief achievement test in terms of correlations between IQ, subtests on the new test, and subtests on an older screening test. There were 55 subjects, ages 8 to 12, randomly selected from 9 educable mentally retarded classes.

63. **BURTON, DWIGHT L., & EARLY, MARGARET J.** The IEA literature study: two reviews. *Research in the Teaching of English*, Spring 1974, *8*, 15-26. (I-12)

Reviews *Literature Education in Ten Countries* by Alan C. Purves. New York: John Wiley and Sons, A Halsted Press Book, 1973.

64. **BUSSEL, ALAN.** The Atlanta *Daily Intelligencer* covers Sherman's march. *Journalism Quarterly*, Autumn 1974, *51*, 405-410. (III-8)

Describes the relationship and rationale of one Southern newspaper's coverage during the Civil War to events during that period.

65. **CALLAWAY, BYRON; JERROLDS, BOB W.; & GWALTNEY, WAYNE.** The relationship between reading and language achievement and certain sociological and adjustment factors. *Reading Improvement*, Spring 1974, *11*, 19-26. (IV-15)

Correlates reading with language achievement and several personal and home factors in 277 tenth graders.

66. **CAMP, BONNIE W.** Psychometric tests and learning in severely disabled readers. *Journal of Learning Disabilities*, October 1973, *6*, 512-517. (V-12)

Examines the relationship between performance on tests of auditory and visual perception and learning rate in reading lessons. Uses 69 dyslexic children as subjects.

67. **Carey, Arthur C.** Effects of the Pony Express and the transcontinental telegraph upon selected California newspapers. *Journalism Quarterly*, Summer 1974, *51*, 320-323. (III-8)

Uses 3 California newspapers to assess the effect of faster communication between the East and West coasts on news content, editorial opinion, and special typographical devices.

68. **Carlson, John G., & Minke, Karl A.** Fixed and ascending criteria for unit mastery learning. *Journal of Educational Psychology*, February 1975, *67*, 96-101. (V-8)

Analyzes the effect of varying stated criteria for course grades on unit learning and final grade. Subjects were 147 psychology students.

69. **Carlson, Kenneth L.** A different look at reading in the content areas. In William D. Page (Ed.) *Help for the reading teacher: new directions in research.* National Conference on Research in English, ERIC Clearinghouse on Reading and Communication Skills, National Institute of Education. Pp. 52-59. (I-14)

Summarizes studies employing miscue analysis focusing on implications and recommendations for teaching reading.

70. **Carpenter, Patricia A.** On the comprehension, storage, and retrieval of comparative sentences. *Journal of Verbal Learning and Verbal Behavior*, August 1974, *13*, 401-411. (IV-9)

Examines the effects of 2 semantic factors (lexical markings and truth value) on sentence verification (comprehension), recall, and recognition. Subjects were 44 introductory psychology students.

71. **Carpenter, Patricia A., & Just, Marcel Adam.** Sentence comprehension: a psycholinguistic processing model of verification. *Psychological Review*; January 1975, *82*, 45-73. (IV-9)

Reviews relevant literature and reports a series of experiments investigating mental processes in sentence comprehension. Subjects (total N=60) were paid university students required to read and verify statements according to their accompanying pictures.

72. **Carpenter, Teryle W.; Gray, Gordon W.; & Galloway, Elizabeth B.** A comparison of individual reading gain. *The Reading Teacher*, January 1974, 27, 368-369. (V-12)

Compares the individual reading gains of 130 second through sixth grade children in vocabulary, comprehension, and total reading when measured by crude gain with residual gain measurement.

73. **Carter, Richard F.; Ruggels, W. Lee; Jackson, Kenneth M.; & Heffner, M. Beth.** Application of signaled stopping technique to communication research. In Peter Clarke (Ed.) *New models for mass communication research. Sage annual reviews of communication research, Vol. II.* Beverly Hills: Sage Publications, 1973. Pp. 15-43. (I-10)

    Discusses research using an experimental technique facilitating subjects' interruption of messages presented through various media, including textbooks, to study particular message effects and discern individual strategies of receiving messages.

74. **Carver, Ronald P.** The Coleman report: using inappropriately designed achievement tests. *American Educational Research Journal*, Winter 1975, *12*, 77-86. (V-12)

    Points out that standardized tests are designed to maximize the within-group variance and minimize between-group variance. Compares Coleman report data with test standardization data to illustrate an alternative interpretation.

75. **Carver, Ronald P.** Measuring the primary effect of reading: reading-storage technique, understanding judgments, and cloze. *Journal of Reading Behavior*, September 1974, *6*, 249-274. (V-12)

    Compares a new measure of reading comprehension to 2 other measures in 3 experiments involving 48 college students who read passages at 4 levels of difficulty.

76. **Chaffee, S. H.** The interpersonal context of mass communication. In F. G. Kline & P. J. Tichenor (Eds.) *Current perspectives in mass communication research. Sage annual reviews of communication research, Vol. I.* Beverly Hills: Sage Publications, 1972. Pp. 95-120. (I-10)

    Describes illustrative studies in an analysis of the most promising research traditions and strategies used to study the interaction of social or face-to-face communication and mass communication.

77. **Chissom, Brad S.; Thomas, Jerry R.; & Collins, Delores G.** Relationships among perceptual-motor measures and their correlations with academic readiness for preschool children. *Perceptual and Motor Skills*, August 1974, *39*, 467-523. (V-12)

    Reports intercorrelations for subtests on 4 measures of visuomotor perception and coordination, standardized intelligence tests, and teachers' ratings of academic achievement on 39 kindergarteners. Uses stepwise multiple correlation to compare predictive validity of the visuo-motor tests.

78. **Clifton-Everest, I. M.** The immediate recognition of tachistoscopically presented visual patterns by backward readers.

Genetic Psychology Monographs, May 1974, *89*, 221-239. (IV-13)

Uses a tachistoscopic recognition to compare visual memory of 15 backward and 15 normal readers, ages 8-11, matched for age and intelligence.

79. **Cline, Ruth** K. J. "Those who don't read have no advantage over those who can't." *Arizona English Bulletin*, April 1972, *14*, 111-115. (II).

Tests 300 future English teacher college students for reading ability and habits.

80. **Clotfelter, James, & Peters**, B. **Guy**. Mass media and the military: selected ratings of fairness. *Journalism Quarterly*, Summer 1974, *51*, 332-334. (III-1)

Uses interviews of 153 active-duty United States Army officers to assess their attitudes toward military coverage by various mass media.

81. **Cogan, John** J. Elementary teachers as nonreaders. *Phi Delta Kappan*, March 1975, *56*, 495-496. (III-5)

Discusses findings from a survey of teachers in 100 elementary schools using questionnaires which indicated sex, age, professional backgrounds, and present teaching age. These factors were correlated with professional readership. Seventy-six per cent of those surveyed returned the questionnaire.

82. **Cohen, Gloria**. How one middle school helped its worst readers. *National Association for Secondary School Principals Bulletin*, April 1975, *59*, 94-97. (V-6)

Describes a reading improvement program that used approximately 25 teachers—mostly volunteers. Reports attendance and 5-month gains by approximately 400 students in grades 6 through 9 in comparison to a group of similar students not in the project.

83. **Cohen, Shelby Ruth**. The relationship between convergent and divergent thinking in science as revealed in sixth and seventh graders. *The Journal of Educational Research*, May/June 1975, *68*, 327-330. (V-12)

Correlates 2 specially constructed science tests administered consecutively to 92 sixth and 97 seventh graders of above average intelligence.

84. **Coke, Esther** U. The effects of readability on oral and silent reading rates. *Journal of Educational Psychology*, June 1974, *66*, 406-409. (IV-17)

Uses a variety of readability pronounceability indices and 2 comprehension measures to investigate the relationship between reading rate and reading difficulty. Subjects were 20 college and 86 high school students.

85. **Coleman, Meri, & Lian, T. L.** A computer readability formula designed for machine scoring. *Journal of Applied Psychology*, April 1975, *60*, 283-284. (V-9)

Describes a readability formula tested against 36 previously scaled passages. The predictors are based on word length, thus permitting use of an optical scanning device.

86. **Coles, Peter, & Foster, Jeremy.** Typographic cueing as an aid to learning from typewritten text. *Journal of Applied Programmed Learning and Educational Technology*, March 1975, *12*, 102-108. (IV-5)

Reports 3 experiments comparing pretest and post test comprehension scores of undergraduates who read a 1,050-word passage with or without core sentences underlined. Prereading instructions varied from none to SQ3R in the 3 experiments.

87. **Cooke, Gwendolyn.** Reading literary works by black and white writers—effects on students' attitudes. *Journal of Black Studies*, December 1974, *5*, 123-133. (III-15).

Assesses change in attitudes toward black literature following use of a literary curriculum package including works of black authors. Classrooms in 2 suburban and 3 urban senior high schools were randomly assigned to experimental (N=132) or control (N=157) groups.

88. **Corlett, Donna.** Library skills, study habits and attitudes, and sex as related to academic achievement. *Educational and Psychological Measurement*, Winter 1974, *34*, 967-969. (IV-2)

Uses multiple regression to assess predictability of grade point average from sex and measures of library skills and study habits and attitudes. Subjects were 81 first year college students.

89. **Cornejo, Ricardo J.** A criterion-referenced assessment system for bilingual reading. *California Journal of Educational Research*, November 1974, *25*, 294-301. (V-12)

Describes the pilot test and field testing planned for evaluating reading instruction of bilungual children through objectives-based test items.

90. Council on Interracial Books for Children. Bias pervades Distar content. New York: Author, 1974, *5(4)*, 1, 6. (III-2).

Analyzes the content of DISTAR reading programs for antihumanist values including stereotypes associated with race, sex roles, and physical features.

91. Council on Interracial Books for Children. *Chicano culture in children's literature: stereotypes, distortions and omissions.* New York: Author, 1975. (III-2)

Surveys 200 children's books purportedly depicting Chicano people, culture, and concerns. Uses criteria such as relevance, authenticity, and accuracy.

92. Crockett, D. J. Component analysis of within correlations of language-skill tests in normal children. *The Journal of Special Education*, Winter 1974, *8*, 361-375. (IV-7)

Analyzes samples of language performance from 353 normal 5½ to 13½ year olds to assess the development of competence. Uses a variety of measures and modalities to determine how much the results depended upon the type of technique.

93. Culbertson, Hugh M. Words vs. pictures: perceived impact and connotative meaning. *Journalism Quarterly*, Summer 1974, *51*, 226-237. (III-14)

Compares sensationalism of verbal descriptions versus photographs as rated by 21 sophomores. Then uses analysis of variance to assess the effects of sensational and non-sensational pictures and descriptions accompanying two 2,000-word articles evaluated by 240 freshmen on a factor-analyzed semantic differential.

94. Cundick, Bert P.; Gottfredson, Douglas K.; & Willson, Linda. Changes in scholastic achievement and intelligence of Indian children enrolled in a foster placement program. *Developmental Psychology*, November 1974, *10*, 815-820. (IV-15)

Compares school recorded IQ and academic achievement of 84 Indian children living in foster homes 5 or more years with a comparable group of children living at home. Testing was done when subjects were 8 to 14 years old.

95. D'Arcy, Pat. *Reading for meaning, Vol. 2: The reader's response.* London: Hutchinson Educational Ltd., 1973. (I-14)

Discusses major research investigations into the responses of students (from prereaders to adults) to content and teaching methods, including their preferences and achievement. Presents techniques for teaching comprehension at all levels.

96. Daugs, Donald R., & Daugs, Fred. Readability of high school biology materials. *Science Education*, October/December 1974, *58*, 471-482. (V-9)

Estimates readability of a biology textbook by formula and cloze procedure. Analyzes difficulties using transformational grammar.

97. **Davey, Beth, & Moretz, Sarah.** Clarifying professional vocabulary: a challenge. *Reading World*, May 1975, *14*, 308-314. (II)

Focuses on "decoding" in an analysis of 26 reading methods textbooks to examine the uses of selected technical terminology in the area of reading.

98. **Davis, Everett E.** Reading frustration level as indicated by the polygraph. *The Journal of Educational Research*, April 1975, *68*, 286-288. (IV-1)

Assesses the relationships of physiological indicators of frustration to frequency of comprehension errors and frequency and type of oral reading errors on an informal reading inventory. Subjects were 62 third, fourth, and fifth graders matched on IQ, reading level, race, and sex.

99. **Davis, Frederick B.** Fundamental factors of reading among elementary-school pupils: a preliminary report. In Phil L. Nacke (Ed.) Interaction: research and practice for college-adult reading. *Twenty-third Yearbook of the National Reading Conference*. Pp. 9-19. (IV-9)

Reports loadings on 3 factors of the 16 parts of a new content-referenced test administered to 95 second and third graders and 134 fifth and sixth graders.

100. **Davis, John.** Are we test wise or test foolish? *Indiana Reading Quarterly*, Winter 1975, 7, 19-20. (II)

Reports some of the findings from a survey on the use of reading tests by Indiana kindergarten through grade 7 teachers. Of 185 questionnaires distributed, 51 were returned.

101. **Davis, John.** Why do you teach reading? *Indiana Reading Quarterly*, Winter 1974, 6, 5-6. (II)

Assesses the responses of 367 classroom teachers and school personnel as to the reason they teach reading.

102. **Davison, W. Phillips.** Functions of mass communication for the collectivity. In W. Phillips Davison & Frederick T. C. Yu (Eds.) *Mass communication research: major issues and future directions*. New York: Praeger, 1974. Pp. 66-82. (I-10)

Discusses research on special groups' uses of mass media, such as press releases, and of publications, such as house organs, to illustrate communication as an organizing force, in order to illustrate facilitation of internal functioning and to suggest research questions regarding organizations.

103. DELANDSCHEERE, G.; GRISAY, A.; & HENRY, G. High achievers in Belgium: a partial analysis of IEA science, literature, and reading comprehension data. *Comparative Education Review*, June 1974, *18*, 188-195. (V-2)

Uses cut-off scores on internationally administered academic achievement tests to compare frequencies of high achievers in Belgium schools to frequencies in other countries.

104. DELAWTER, JAYNE A. 3 miscue patterns: the relationship of beginning reading instruction and miscue patterns. In William D. Page (Ed.) *Help for the reading teacher: new directions in research.* National Conference on Research in English, ERIC Clearinghouse on Reading and Communication Skills, National Institute of Education. Pp. 42-51. (V-5)

Uses 30 words presented in context or isolation to 169 second graders in low income area schools selected because initial reading instruction emphasized decoding or meaning. Examines patterns of miscues according to instructional method.

105. DENNEY, DOUGLAS R. Relationship of three cognitive style dimensions to elementary reading abilities. *Journal of Educational Psychology*, October 1974, *66*, 702-709. (IV-12)

Compares 40 normal to 40 poor readers from grades 2 to 5 on a wide variety of measures of cognitive-perceptual behaviors. Subjects were white, middleclass children in a rural school.

106. DERVIN, BRENDA, & GREENBERG, BRADLEY S. The communication environment of the urban poor. In F. G. Kline & P. J. Tichenor (Eds.) *Current perspectives in mass communication research. Sage annual reviews of communication research, Vol. I.* Beverly Hills: Sage Publications, 1972. Pp. 195-233. (I-10)

Reviews research focusing on poverty and communication jointly, including an original survey of 366 low income black adults interviewed about their communication and information processing behaviors.

107. DEVILLIERS, PETER A. Imagery and theme in recall of connected discourse. *Journal of Experimental Psychology*, August 1974, *103*, 263-268. (IV-9)

Compares 63 undergraduates' retention of the same story written with either all definite or all indefinite articles, presented either on tape or in print. Sentences were rated for imagery and thematic centrality by 27 subjects.

108. DEVRIES, RHETA. Relationships among Piagetian, IQ, and achievement assessments. *Child Development*, September 1974, 45, 746-756. (IV-3)

Factor analyzes 4 measures of cognitive functioning having widely different theoretical bases. Subjects were 143 children, ages 5 to 7.

109. DEWITZ, PETER. The process of perception in wine tasting and reading. In Malcolm P. Douglass (Ed.) Reading between and beyond the lines. *Claremont Reading Conference 37th Yearbook*, 1973. Pp. 156-162. (I-13)

Summarizes and synthesizes the major findings from several studies on the relationship of visual perception and perceptual training to reading.

110. DIAZ-GUERRERO, ROGELIO, & HOLTZMAN, WAYNE H. Learning by televised "Plaza Sesamo" in Mexico. *Journal of Educational Psychology*, October 1974, *66*, 632-643. (V-3)

Compares objective test scores of viewers and non-viewers of a Spanish version of Sesame Street. Subjects were 173 preschoolers attending lowest-class day care centers in Mexico City. Subjects were randomly assigned to experimental and control groups.

111. DIETERICH, DANIEL J. Annotated bibliography of research in the teaching of English, July 1, 1974 to December 31, 1974. *Research in the Teaching of English*, Spring 1975, *9*, 115-140. (I-1)

Annotates many studies categorized under bilingual and bidialectal studies; language and verbal learning; literature, humanities, and media; teacher education; testing and evaluation; written and oral communication; and research instruments.

112. DINNAN, JAMES A. A comparison of Thorndike/Lorge and Carroll prime frequency word lists. *Reading Improvement*, Spring 1975, *12*, 44-46. (V-9)

Reports the rankings of 110 high frequency words on 2 word lists.

113. DOHRMAN, MARY H. The suitability of encyclopedias for social studies reference use in the intermediate grades. *The Journal of Educational Research*, December 1974, *68*, 149-152. (V-9)

Compares ranges of reading abilities anticipated for fourth, fifth, and sixth grades with readabilities of 8 encyclopedias used in these grades as estimated by the Dale-Chall formula and the Fry graph.

114. **Dommermuth, William P.** How does the medium affect the message? *Journalism Quarterly*, Autumn 1974, *51*, 441-447. (III-1)

Compares the effectiveness of presenting the same message through radio, TV, film, or print to 171 college students randomly assigned to each condition.

115. **Donohew, Lewis, & Tipton, Leonard.** A conceptual model of information seeking, avoiding, and processing. In Peter Clarke (Ed.) *New models for mass communication research. Sage annual reviews of communication research, Vol. II.* Beverly Hills: Sage Publications, 1973. Pp. 243-268. (III-17)

Presents an alternative to cognitive dissonance as an explanation of information seeking strategies, and reports a study of the relationships between personality measures, self-reports of work on a term paper, and final grade as a test of the alternative. Subjects were 18 students in communication theory.

116. **Donohue, George A.; Tichenor, Phillip J.; & Olien, Clarice N.** Gatekeeping: mass media systems and information control. In F. G. Kline & P. J. Tichenor (Eds.) *Current perspectives in mass communication research. Sage annual reviews of communication research, Vol. I.* Beverly Hills: Sage Publications, 1972. Pp. 41-69. (I-10)

Reviews and summarizes research on relationships among perceptions and performance of reporters, editors, and other "gatekeepers," on community variables, nature of the media, and news source system; suggests that information control serves a conflict management or system maintenance function.

117. **Dorry, George W., & Zeaman, David.** Teaching a simple reading vocabulary to retarded children: effectiveness of fading and nonfading procedures. *American Journal of Mental deficiency*, May 1975, *79*, 711-716. (VI)

Reports results of training 36 non-readers on an 8-word reading vocabulary under one of 4 experimental conditions, varying picture-word associations and fading. Subjects were ages 23 to 44 with IQ's 23 to 55.

118. **Downing, John.** Some curious paradoxes in reading research. *Reading* (UKRA), December 1974, *8*, 2-10. (I-3)

Presents a model of learning to read which is consistent with 4 seemingly counter-intuitive but well documented findings.

119. **Downing, John, & Dalrymple-Alford, E. C.** A methodological critique of the 1973 IEA survey of reading comprehension

education in 15 countries. *Reading Research Quarterly*, 1974-1975, *10*(2), 212-227. (I-12)

Summarizes the IEA reading study and critically reviews the design, reporting of findings, and conclusions drawn.

120. DOWNING, JOHN, & OLIVER, PETER. The child's conception of 'a word.' *Reading Research Quarterly*, 1973-1974, *9(4)*, 568-582. (IV-8)

Examines children's understanding of what constitutes a spoken word using non-speech sounds and speech sounds from isolated phonemes through sentences. Subjects were 28 boys and 28 girls ages 4.5 to 8.0.

121. DUFF, R. ELEANOR, & SWICK, KEVIN. Primary level tutors as an instructional resoure. *Reading Improvement*, Winter 1974, *11*, 39-44. (V-6)

Tests the effect of a structured tutorial program on reading achievement and self concept of tutors (third and fourth graders) and tutees (first and second graders). Of the 30 subjects at each level (N=60), half were randomly assigned to tutoring, and half served as controls.

122. DULIN, KENNETH L., & CHESTER, ROBERT D. A validation study of the Estes Attitude Scale. *Journal of Reading*, October 1974, *18*, 56-59. (V-12)

Uses teacher ratings and self ratings of 140 eleventh graders as validation criteria of a Likert scale assessing reading attitudes.

123. DURKIN, DOLORES. A six year study of children who learned to read in cshool at the age of four. *Reading Research Quarterly*, 1974-1975, *10(1)*, 9-61. (V-3)

Compares reading achievement during grades 1 through 4 of children who had participated in a 2-year pre-first grade language arts program with that of their non-participant classmates.

124. DWYER, CAROL ANNE. Influence of children's sex role standards on reading and arithmetic achievement. *Journal of Educational Psychology*, December 1974, *66*, 811-816. (IV-2)

Analyzes relationships among academic achievement, IQ, grade, sex, sex role preference, and the extent to which subjects considered activities as sex appropriate. Subjects were 385 white middleclass second through twelfth graders.

125. DZAMA, MARY ANN. Comparing use of generalizations of phonics in LEA, basal vocabulary. *The Reading Teacher*, February 1975, *28*, 466-472. (V-9)

Uses a random sample of 2,025 sight words obtained from 225 first graders and grouped according to frequency to test for frequency of conformity to 45 phonics principles.

126. **Eaves, L. C.; Kendall, D. C.; & Chrichton, J. U.** The early identification of learning disabilities: a follow-up study. *Journal of Learning Disabilities*, December 1974, 7, 632-638. (V-12).

Examines the efficacy of kindergarten screening done in October and again in June to predict grade 2 standardized test achievement. Of the 163 children followed up, 50 classified as "minimally brain damaged" or "immature" were also given psychological and neurological examinations.

127. **Eberhard, Wallace B.** Circulation and population: comparison of 1940 and 1970. *Journalism Quarterly*, Autumn 1974, *51*, 503-507. (III-9)

Uses data from the Audit Bureau of Circultion and the United States Census to assess relationships between overall newspaper circulation (727 randomly selected dailies) and demographic variables of potential readers.

128. **Eberhard, Wallace B.** Daily newspaper starts and suspensions, 1960-69. *Journalism Quarterly*, Spring 1975, 52, 117-120. (III-9)

Assesses starts and suspensions of American daily newspapers tabulated by census regions, circulation, and population.

129. **Edelstein, Alex S.** Decision-making and mass communication: a conceptual and methodological approach to public opinion. In Peter Clarke (Ed.) *New models for mass communication research. Sage annual reviews of communication research, Vol. II.* Beverly Hills: Sage Publications, 1973. Pp. 81-118. (III-17)

Presents a sample open-ended interview schedule designed to minimize biasing respondents along with data supporting the usefulness of the instrument. A survey of 645 urban adults' opinions about Vietnam was conducted, to test, among other hypotheses, about education and use of mass media.

130. **Edelstein, Alex S.** *The uses of communication in decision-making: a comparative study of Yugoslavia and the United States.* New York: Praeger, 1974. (III-1)

Uses open ended questions, with respondents defining issues and information sources, and analyzes data by demographic variables, in a study of mass media and public opinion in Seattle, Belgrade, and Ljubljana.

131. **Edwards, Peter.** The effect of idioms on children's reading and understanding of prose. In Bonnie Smith Schulwitz (Ed.) *Teachers, tangibles, techniques: comprehension of content in reading.* Newark, Del.: International Reading Association, 1975. Pp. 37-46. (IV-9)

Assesses the relationship between amount of idiomatic language in reading passages and comprehension. Subjects were 256 eighth graders randomly assigned to one of 4 experimental conditions. Comprehension test scores were analyzed by sex and IQ level.

132. **Edwards, Peter.** Idioms and reading comprehension. *Journal of Reading Behavior*, September 1974, *6*, 287-293. (IV-8)

Compares eighth graders' comprehension of literal versus metaphorical expressions of the same concept. The 256 subjects were randomly assigned to 4 experimental conditions.

133. **Egeland, Byron, & Winer, Ken.** Teaching children to discriminate letters of the alphabet through errorless discrimination training. *Journal of Reading Behavior*, July 1974, *6*, 143-150. (IV-8)

Compares the effectiveness of 2 methods of training preschoolers to discriminate between 2 letters with slightly different distinctive features. Subjects were 64 innercity children.

134. **Ehri, Linnea C., & Wilce, Lee S.** Research in brief printed intonation cues and reading in children. *Visible Language*, Summer 1974, *8*, 265-274. (IV-9)

Investigates effects of word size variations reflecting pitch and stress, form class of words, and phrasing on silent reading time and free and prompted recall of facts. Subjects included 40 third and 40 fourth graders, half male and half female, reading above the fiftieth percentile on standardized achievement tests.

135. **Elkind, David.** Cognitive development and reading. Malcolm P. Douglass (Ed.) *Claremont Reading Conference 38th Yearbook*, 1974. Pp. 10-20. (I-13)

Discusses findings from relating reading and achievement to logical abilities and personal social characteristics in young children.

136. **Ellis, Hadyn D., & Shepherd, John W.** Recognition of abstract and concrete words presented in left and right visual fields. *Journal of Experimental Psychology*, November 1974, *103*, 1035-1036. (IV-1)

Reports an experiment testing the accuracy with which nouns classed as either high or low in concreteness were recognized from right and left hemifields. The 6 male and 6 female subjects were right-handed.

137. **Engin, Ann W.** An analysis of supplementary subtests and their influence on total WISC scores of high achieving students. *The Journal of Psychology*, September 1974, *88*, 121-125. (IV-3)

Compares WISC Verbal IQ's, Performance IQ's, and Full Scale IQ's with and without Digit Span and/or Mazes for 44 fifth graders whose reading, arithmetic, and teacher judgment of achievement were high.

138. **Engin, Ann W.** The relative importance of the subtests of the Metropolitan Readiness Test in the prediction of first grade reading and arithmetic achievement criteria. *Journal of Psychology*, November 1974, *88*, 289-298. (V-12)

Reports regression of 5 standardized achievement subtests given at the end of first grade on 6 readiness subtests given to 100 kindergarteners.

139. **Engle, Patricia Lee.** Language medium in early school years for minority language groups. *Review of Educational Research*, Spring 1975, *45*, 283-325. (I-11)

Surveys some of the relevant literature and evaluates the evidence regarding what language to use in teaching minority children in a bilingual culture.

140. **Erickson, Lawrence, & Hansen, Lee H.** Performance on cloze passages in and out of context. In Phil L. Nacke (Ed.) Interaction: research and practice for college-adult reading. *Twenty-third Yearbook of the National Reading Conference.* Pp. 158-162. (IV-9)

Compares cloze performance on passages from a social studies text and a basal reader, each presented either within the total message or in isolation. Subjects were 50 male and 50 female white middleclass fifth graders randomly assigned to one of the 4 passages.

141. **Evanechko, Peter; Ollila, Lloyd; & Armstrong, Robert.** An investigation of the relationships between children's performance in written language and their reading ability. *Research in the Teaching of English*, Winter 1974, *8*, 315-326. (IV-9)

Analyzes written language samples from 118 sixth graders in Victoria, British Columbia, using correlational and multiple linear regression techniques to identify common elements in reading and writing and to predict reading achievement.

142. **Evarts, Dru, & Stempel, Guido H., III.** Coverage of the 1972 campaign by TV, news magazines and major newspapers.

Journalism Quarterly, Winter 1974, *51*, 645-648, 676. (III-2)

Studies coverage of the 1972 presidential campaign by 3 television networks, 3 news magazines, and 6 newspapers.

143. **Eyre, Frank.** *British children's books in the twentieth century.* New York: E. P. Dutton, 1973. (III-13)

Examines the main trends in British children's books from 1900 to the present, devoting special attention to authors, artists, and books that have been acclaimed outstanding in the field.

144. **Fairbanks, Marilyn M.** The effect of college reading improvement programs on academic achievement. In Phil L. Nacke (Ed.) Interaction: research and practice for college-adult reading. *Twenty-third Yearbook of the National Reading Conference.* Pp. 105-114. (I-8)

Examines 79 studies which used GPA as criterion for evaluating college reading improvement programs to gain information about students, program emphasis, and selected factors relating to content and operation of the programs.

145. **Felker, Daniel B., & Dapra, Richard A.** Effects of question type and question placement on problem-solving ability from prose material. *Journal of Educational Psychology*, June 1975, *67*, 380-384. (IV-5)

Tests the effect of verbatim versus comprehension questions and pre- or post-questions position on a criterion test requiring application of principles and concepts from the text. Subjects were 95 introductory psychology students.

146. **Feshbach, Seymour; Adelman, Howard; & Fuller, Williamson W.** Early identification of children with high risk of reading failure. *Journal of Learning Disabilities*, December 1974, *7*, 639-644. (V-12)

Compares and intercorrelates 32 kindergarten teachers' behavior ratings and scores on several psychometric tests of children in 10 middleclass Vancouver schools. The measures were validated on first-grade teacher ratings and standardized tests of reading given in grade 1.7.

147. **Fisher, Judith L., & Harris, Mary B.** Effect of note-taking preference and type of notes taken on memory. *Psychological Reports*, August 1974, *35*, 384-386. (V-8)

Analyzes relationships among note taking preference, types of notes taken, and review of notes on quiz scores. Subjects were 112 undergraduates.

148. **Fletcher, Alan D., & Winn, Paul R.** An intermagazine analysis of factors in advertisement readership. *Journalism Quarterly*, Autumn 1974, *51*, 425-430, 489. (III-6)

Uses principal-components factor analysis, multiple regression, and multiple-set canonical correlation of 27 variables to reanalyze data on women's recall of food advertisements in 18 magazines.

149. **Flood, James, & Zehm, Stanley.** Instructional needs of reading teachers in the primary grades. *Reading Improvement*, Spring 1975, *12*, 50-51. (II)

Reports survey findings from first through third grade teachers regarding their perceived weaknesses of reading programs.

150. **Forslund, Morris A., & Hull, Ronald E.** Teacher sex and achievement among elementary school pupils. *Education*, Fall 1974, *95*, 87-89. (IV-2)

Reports the relationships between teacher sex and student achievement, holding IQ constant, in reading, arithmetic, language arts, and science. Subjects were 2,672 sixth graders taught by 95 teachers.

151. **Fowler, Robert L., & Barker, Anne S.** Effectiveness of highlighting for retention of text material. *Journal of Applied Psychology*, June 1974, *59*, 358-364. (IV-5)

Reports 2 experiments assessing relationships among active/passive participation in highlighting texts, agreement among students on the importance of portions of the text, retention, and types of emphasis. Subjects were 100 undergraduates.

152. **Francis-Williams, Jessie.** *Children with specific learning difficulties: the effect of neuro-developmental learning disorders on children of normal intelligence*, 2d ed. New York: Pergamon, 1974. (I-6)

Compares 44 children, ages 3-4 years, who had been identified at birth as having minor neurological dysfunction, with 63 normal controls on a battery of psychological tests and rating scales. Reports followup psychological and demographic data collected at ages 8-10 on 42 "cases" and 43 controls.

153. **Frase, Lawrence T., & Kreitzberg, Valerie S.** Effect of topical and indirect learning directions on prose recall. *Journal of Educational Psychology*, April 1975, *67*, 320-324. (IV-5)

Studies the recall effects of telling subjects what sentences to learn or not to learn by specific reference to words in or topics of sentences in a 588-word passage. Subjects were 130 introductory educational psychology students.

154. **FRELOW, ROBERT D.; CHARRY, JUNE; & FREILICH, BERTRAM.** Academic progress and behavioral changes in low achieving pupils. *The Journal of Educational Research*, February 1974, 67, 263-266. (V-5)

Investigates the academic and behavioral progress of low achievers in grades 1-3 in reading and math before and after the introduction of assistant teachers.

155. **FRIEDMAN, NATHAN.** Is reading disability a fusional-eye movement disability? (Part II). *Journal of the American Optometric Association*, June 1974, 45, 727-732. (IV-1)

Discusses the effects on reading of fusional eye movement training in 2 experiments with poor readers, the first with 8 ninth graders, the second comparing 40 eighth and ninth graders with a matched group of 30 given only remedial reading instruction.

156. **FRITH, UTA.** A curious effect with reversed letters explained by a theory of schema. *Perception & Psychophysics*, August 1974, *16*, 113-116. (IV-6)

Uses 4 scanning tasks to test hypotheses about cognitive processing of familiar versus unfamiliar (reversed) letters in contexts of unfamiliar and familiar arrays respectively. There were 8 to 20 subjects, mostly college students, in each experiment.

157. **FRITH, UTA.** Internal schemata for letters in good and bad readers. *British Journal of Psychology*, May 1974, 65, 233-241. (IV-12)

Attempts to separate out perceptual and motor processes involving internal representation of shapes by studying speed of copying and reversing normal and reversed letters and letter-like shapes. Subjects were 76 children ages 7 and 12, including 28 retarded readers and 20 adult students.

158. **FROESE, V.** Does the Dolch do? *The Alberta Journal of Educational Research*, March 1975, *21*, 23-27. (V-9)

Compares a widely used basic word recognition list with a comparable list drawn from a word frequency corpus on differentiation by grades, IQ, sex, and socioeconomic status. Also gives correlations with a word opposites test given 5 months later. Subjects were 155 second and 179 third graders.

159. **FROESE, VICTOR.** Cloze readability versus the Dale-Chall formula. In Bonnie Smith Schulwitz (Ed.) *Teachers, tangibles, techniques: comprehension of content in reading.* Newark, Del.: International Reading Association, 1975. Pp. 23-30. (V-9)

Assesses the validity of the Dale-Chall readability ratings for sixth grade science textbooks using a cloze test as criterion. Subjects were 366 randomly selected sixth graders.

160. **FROESE, VICTOR.** IRI's at the secondary level re-examined. In Phil L. Nacke (Ed.) Interaction: research and practice for college-adult reading. *Twenty-third Yearbook of the National Reading Conference.* Pp. 120-124. (I-9)

Attempts to delineate the problems of using IRI's at the secondary level by making a retrospective search of the ERIC data bank.

161. **FUCHS, DOUGLAS A., & LYLE, JACK.** Mass media portrayal—sex and violence. In F. G. Kline & P. J. Tichenor (Eds.) *Current perspectives in mass communication research. Sage annual reviews of communication research, Vol. I.* Beverly Hills: Sage Publications, 1972. Pp. 235-264. (I-10)

Reviews survey and experimental research on frequency, type, and the effect of sexual and violent content in newspapers, magazines, comic books, and other print media as well as other mass media.

162. **FULLER, GERALD B., & FRIEDRICH, DOUGLAS.** Three diagnostic patterns of reading disabilities. *Academic Therapy,* Winter 1974-1975, *10,* 219-231. (IV-13)

Uses a battery of psychological tests to delineate correlates of reading retardation in 3 subgroups: 62 primary, 55 secondary, 55 organic. Subjects' average age was 10; average grade, fourth.

163. **GAGNE, ELLEN D., & ROTHKOPF, ERNST Z.** Text organization and learning goals. *Journal of Educational Psychology,* June 1975, *67,* 445-450. (IV-5)

Analyzes relationships of intentional and incidental learning of a 2,400-word passage relating to placement of goal relevant information (dispersed versus contiguous) and presenting goals versus instructions to remember. Subjects were 157 paid high school students.

164. **GALASSI, JOHN P.; GALL, MEREDITH D.; DUNNING, BARBARA; & BANKS, HENRY.** The use of written versus videotape instruction to train teachers in questioning skills. *The Journal of Experimental Education,* Winter 1974, *43,* 16-23. (II)

Uses pre- and post-treatment audiotaped discussions to assess the effectiveness of instructional medium. Subjects were 56 intermediate grade teacher volunteers randomly assigned to videotaped or written versions of an in-service course on questioning skills, and 24 paid controls.

165. **GALLISTEL, ELIZABETH.** Achievement on a test of specific coding skills contrasted with achievement on global test of reading skills. *Journal of Learning Disabilities*, January 1973, 1-9. (V-12)

Measures the coding ability of 55 first and second graders and compares this to achievement on standardized reading tests.

166. **GANTT, WALTER N.; WILSON, ROBERT M.; & DAYTON, C. MITCHELL.** An initial investigation of the relationship between syntactical divergency and the listening comprehension of black children. *Reading Research Quarterly*, 1974-1975, *10*(2), 193-211. (IV-7)

Analyzes relationships among measures of oral language production and listening in black third graders from a Title I school (N = 48) and a non-Title I school (N = 48) as a function of examiner race and status (adult or sixth grader).

167. **GARDNER, HOWARD.** The naming and recognition of written symbols in aphasic and alexic patients. *Journal of Communication Disorders*, June 1974, 7, 141-153. (VI)

Compares brain damaged patients with and without language disorders and non-brain damaged patients in a Veterans' Administration hospital (N = 71) on a 66-item test to obtain evidence on the relationship between recognizing, naming, and reading various symbols.

168. **GAZIANO, CECILIE.** Readership study of paper subsidized by government. *Journalism Quarterly*, Summer 1974, *51*, 323-326. (III-6)

Relates community awareness to readership of an issue oriented newspaper mailed to all dwellings in a Model Cities area. A telephone survey of 140 residents from the 235 randomly sampled households was used to collect data.

169. **GERSHUNY, H. LEE.** Public doublespeak: the dictionary. *College English*, April 1975, *36*, 938-942. (III-2)

Documents the perpetuation of sex role stereotyping in an unabridged dictionary.

170. **GICKLING, EDWARD E., & JOINER, LEE M.** Complex interactions of an auditory ability and aspiration in predicting specific reading deficits. *American Journal of Mental Deficiency*, September 1974, *79*, 162-168. (VI)

Uses multiple linear regression to investigate relationships among memory for sounds, level of aspiration, and oral and silent reading in 22 female and 27 male institutionalized mentally retarded subjects, ages 11 to 27.

171. Glass, David C.; Neulinger, John; & Brim, Orville G., Jr. Birth order, verbal intelligence, and educational aspiration. *Child Development*, September 1974, *45*, 807-811. (IV-12)

Presents data on 2,523 tenth and twelfth graders. The study was designed to test whether first and only children are superior to later born children in reading ability and achievement motivation.

172. Glavin, John P. Behaviorally oriented resource rooms: a follow-up, *The Journal of Special Education*, Winter 1974, *8*, 337-347. (IV-5)

Assesses behavior and achievement of children in regular classes 2 to 3 years after referral and part-time placement (N = 65) or non-placement (N = 68) in a resource room to determine if improvement had been maintained.

173. Glock, M. D. National assessment and reading between and beyond the lines. In Malcolm P. Douglass (Ed.) Reading between and beyond the lines. *Claremont Reading Conference 37th Yearbook*, 1973. Pp. 124-128. (V-12)

Discusses test construction, method of reporting, and a few findings from a national annual survey of the knowledge, skills, understandings, and attitudes of young Americans.

174. Golub, Lester S., & Kidder, Carole. Syntactic density and the computer. *Elementary English*, November/December 1974, *51*, 1128-1131. (IV-17)

Describes the output of a computer program designed to apply the authors' syntactic density definition to language samples.

175. Gonzales, Phillip C., & Elijah, David V., Jr. Rereading: effect on error patterns and performance levels on the IRI. *The Reading Teacher*, April 1975, *28*, 647-652. (V-12)

Investigates change in oral errors after rereading to assess the effect on determining instructional levels. Subjects were 26 third graders who were average readers.

176. Goodacre, Elizabeth J. Reading research in Britain—1974. *Reading (UKRA)*, March 1975, *9*, 5-11. (I-1)

Categorizes and summarizes research published in Great Britain during 1974. Cites 23 studies.

177. Goody, Jack. Restricted literacy in northern Ghana. In Jack Goody (Ed.) *Literacy in traditional society*. Cambridge, England: The University Press, 1968. Pp. 199-263. (III-7)

Takes the area of northern Ghana and discusses the impact of writing there on non-literate tribes and partially literate states.

178. **GOODY, JACK, & WATT, IAN.** The consequences of literacy. In Jack Goody (Ed.) *Literature in traditional society.* Cambridge, England: The University Press, 1968. Pp. 27-69. (III-7)

Considers the consequences of literacy historically.

179. **GOUGH, KATHLEEN.** Implications of literacy in traditional China and India. In Jack Goody (Ed.) *Literacy in traditional society.* Cambridge, England: The University Press, 1968. Pp. 70-84. (III-7)

Presents a historical analysis of literacy and its development and uses in China and India.

180. **GOUGH, KATHLEEN.** Literacy in Kerala. In Jack Goody (Ed.) *Literacy in traditional society.* Cambridge, England: The University Press, 1968. Pp. 133-160. (III-7)

Analyzes the development and role of literacy in the south Indian state of Kerala. Discusses literacy in the state today.

181. **GRASS, ROBERT C., & WALLACE, WALLACE H.** Advertising communication: print vs. TV. *Journal of Advertising Research,* October 1974, *14,* 19-23. (III-1)

Investigates relationships among reported use probabilities, giving attention to and recall of 6 pairs of equated advertisements presented under simulated natural conditions on TV and print. Subjects were 84 urban housewives.

182. **GREENE, H. ROSS, & KERSEY, HARRY A.** Upgrading Indian education: a case study of the Seminoles. *School Review,* February 1975, *83,* 345-361. (V-11)

Describes a remedial tutorial program in an Indian elementary school. Reports achievement gain relative to pre-program gains and compares it with gain in 2 other Indian schools.

183. **GRIFFIN, DONALD C.; WALTON, HOWARD N.; & IVES, VERA.** Saccades as related to reading disorders. *Journal of Learning Disabilities,* May 1974, *7,* 310-316. (IV-11)

Analyzes eye movements of 13 inadequate readers compared to 13 adequate readers; both groups average 10.5 mean chronological age.

184. **GROFF, PATRICK J.** Long versus short words in beginning reading. *Reading World,* May 1975, *14,* 277-289. (I-3)

Reviews the literature on the effectiveness of initial reading instruction using long versus short words.

185. **Groff, Patrick.** Reading ability and auditory discrimination: are they related? *The Reading Teacher*, May 1975, *28*, 742-747. (I-4)

In a critical review of relevant research, questions the presumed relationship between auditory discrimination and reading achievement.

186. **Groff, Patrick.** "Sight" words and the disabled reader. *Academic Therapy*, Fall 1974, *10*, 101-108. (I-6)

Reviews the literature on word recognition and recommends certain teaching practices.

187. **Groff, Patrick.** Sight words: the humpty dumpty of reading instruction. *Reading (UKRA)*, December 1974, *8*, 11-16. (I-3)

Finds support from several studies on perception, word recognition, and word frequency for refuting the "whole-word" approach with beginning readers.

188. **Gross, Alan E.; Schmidt, Michael J.; Keating, John P.; & Saks, Michael J.** Persuasion, surveillance, and voting behavior. *Journal of Experimental Social Psychology*, September 1974, *10*, 451-460. (III-16)

Compares effects of 3 types of letters (persuasive, surveillance, and feedback) on voting in a college election 2 days later and one week later. Subjects included over 4,000 students divided among the 3 experimental conditions, and 4,392 controls.

189. **Grunig, James E.** Three stopping experiments on the communication of science. *Journalism Quarterly*, Autumn 1974, *51*, 387-399. (III-17)

Reports results of 3 experiments comparing 3 stylistic devices (use of analogies, examples, or parables) and perceived relevance of content as determinants of whether or not readers stop to think about the material. Subjects were 27 to 55 college students in each condition.

190. **Guenin, Zena Beth.** Women's pages in American newspapers: missing out on contemporary content. *Journalism Quarterly*, Spring 1975, *52*, 66-69, 75. (III-2)

Compares content analysis of traditional women's pages in 3 metropolitan newspapers with that of redesigned general interest sections in 3 papers matched for circulation and reputation.

191. **Guthrie, John T.; Seifert, Mary; Burnham, Nancy A.; & Caplan, Ronald I.** The maze technique to assess, monitor reading comprehension. *The Reading Teacher*, November 1974, *28*, 161-168. (V-12)

Compares the performance of 13 average and 13 poor readers on a new method of identifying comprehension levels, and on oral reading. The groups were matched on second grade reading achievement, sight vocabulary, and average IQ.

192. **Haase, Ann Marie Bernazza.** A review of the factor analytic research in reading. In Phil L. Nacke (Ed.) Interaction: research and practice for college-adult reading. *Twenty-third Yearbook of the National Reading Conference.* Pp. 97-104. (I-14)

Presents a critical review of 17 studies which used multivariate statistical techniques to assess reading ability, comprehension, cloze and closure, and construct validity.

193. **Hale, F. Dennis.** How reporters and justices view coverage of a state appellate court. *Journalism Quarterly*, Spring 1975, 52, 106-110. (III-12)

Compares perceptions of 9 judges and 8 reporters as to court procedure, quality, and scope of press coverage assessed through open-ended interviews.

194. **Hallahan, Daniel P., & Cruickshank, William M.** *Psychoeducational foundations of learning disabilities.* Englewood Cliffs, N. J.: Prentice-Hall, 1973. (I-6)

Presents a comprehensive summary and evaluation of research in the field of learning disabilities, including studies done by Orton, deHirsch, and others on reading disabled children.

195. **Hammill, Donald D., & Larsen, Stephen C.** The relationship of selected auditory perceptual skills and reading ability. *Journal of Learning Disabilities*, August/September 1974, 7, 429-435. (I-4)

Reviews correlational studies of reading and auditory discrimination, memory, blending, and auditory-visual integration in determining the role of auditory factors in the learning to read process.

196. **Hargis, Charles H.; Gickling, Edward E.; & Mahmoud, Cathy Crossland.** The effectiveness of TV in teaching sight words to students with learning disabilities. *Journal of Learning Disabilities*, January 1975, 8, 44-46. (V-11)

Compares children's retention of 45 sight words presented on a daily TV program with their word recognition of 45 words matched for difficulty but not formally taught. Subjects were 8 learning disabled students, ages 7 to 9.

197. **Haring, Norris G., & Krug, David A.** Placement in regular programs: procedures and results. *Exceptional Children*, March 1975, *41*, 413-417. (V-11)

Reports a study of 48 randomly selected lower class, elementary grade, mentally retarded children—half of whom were placed in an experimental program. A year later, 13 experimental subjects were returned to regular classes. The following year, academic achievement of all groups was compared.

198. **Harker, W. John.** Introspective-retrospective case studies in retrospect: implications for modeling the reading process. In Phil L. Nacke (Ed.) Interaction: research and practice for college-adult reading. *Twenty-third Yearbook of the National Reading Conference*, Pp. 89-96. (I-14)

Examines and synthesizes findings in 23 recent studies of adults' descriptions of the processes they used in reading. Studies are categorized as ideational fluency, manipulation and abstraction, attention to language, and objectivity and uniqueness.

199. **Harris, Mary L.** Textbooks in vocational courses. *Reading Horizons*, Spring 1974, *14*, 137-144. (V-9)

Presents Fry graph readability estimates and a brief description of 14 vocational textbooks.

200. **Harris, V. William, & Sherman, James A.** Homework assignments, consequences, and classroom performance in social studies and mathematics. *Journal of Applied Behavior Analysis*, Winter 1974, *7*, 505-519. (V-6)

Compares the effect of assigning versus not assigning homework and of homework with versus homework without consequences (leaving class early) on correctly answering questions in class, on accuracy, and on completion of the assignment. Subjects included 52 sixth graders.

201. **Hartlage, Lawrence C.** Prereading screening to determine optimum reading instructional approaches. *Reading Improvement*, Spring 1974, *11*, 7-8. (V-12)

Correlates scores on a battery of prereading scales of 814 first graders with measures of reading achievement at the end of first grade. Provides separate correlation for subjects taught by different methods.

202. **Hartley, James, & Burnhill, Peter.** A brief annotated bibliography. *Journal of Applied Programmed Learning and Educational Technology*, March 1975, *12*, 125-126. (I-7)

Presents 37 references on reading, readability, and legibility, including textbooks, collected readings, reviews, surveys, bibliographies, journal articles, and journals.

203. **HASKETT, G. J., & LENFESTEY, WILLIAM.** Reading-related behavior in an open classroom: effects of novelty and modelling on preschoolers. *Journal of Applied Behavior Analysis*, Summer 1974, *7*, 233-241. (V-3)

Reports changes in children's frequency of looking at books after experimental conditions of introducing new books and reading aloud by undergraduate tutors in a relatively unstructured prereading classroom. Subjects were 8 middleclass children, ages 3 to 5 years and 9 months.

204. **HASKINS, JACK B., & FLYNNE, LOIS P.** Effect of headline typeface variation on reading interest. *Journalism Quarterly*, Winter 1974, *51*, 677-682. (III-3)

Samples 150 female household heads in a study of the effect of headline typeface on page appeal of the woman's page.

205. **HATCH, EVELYN; POLIN, PAM; & PART, SUSAN.** Acoustic scanning and syntactic processing three reading experiments—first and second language learners. *Journal of Reading Behavior*, September 1974, *6*, 275-285. (IV-8)

Analyzes errors in 3 letter-cancelling tasks to assess relationships between language familiarity and attention to letters in words differing in function, frequency, and phonology. Subjects were 70 native and 100 foreign students in an American university.

206. **HAWKINS, GREGORY W.** Technology as an influence in art education literature. *Studies in Art Education*, No. 1, 1974-1975, *16*, 38-44. (III-2)

Analyzes content of articles published in 3 art periodicals from 1962 to 1972 to assess the interaction of technology with the visual arts, art education, asthetic considerations, and the arts in general.

207. **HAYES, CHARLES S., & PRINZ, ROBERT J.** Teacher-rated impulsivity and achievement among mildly retarded youth. *Psychology in the Schools*, January 1975, *12*, 100-102. (IV-14)

Reports correlations between response style, reading, arithmetic, and spelling of 235 children, ages 8 to 17, as rated by teachers on a 5-point scale.

208. **HEINTZ, PAUL.** Teacher expectancy for academic achievement of mentally retarded pupils. *Mental Retardation*, June 1974, *12*, 24-27. (II)

Reports results of a questionnaire asking 72 special class teachers to estimate ultimate reading ability of a hypothetical mentally retarded child whose sex and socioeconomic status were designated.

209. **Hicks, Ronald G., & Gordon, Avishag.** Foreign news content in Israeli and U.S. newspapers. *Journalism Quarterly*, Winter 1974, *51*, 639-644. (III-2)

Uses 3 Israeli and one U.S. newspaper to study the significance of 3 major factors on foreign news content.

210. **Highton, Jake.** France's greatest newspaper, alas; a critical look at *Le Monde*. *Journalism Quarterly*, Summer 1974, *51*, 326-329. (III-11)

Describes *Le Monde's* image and reputation in terms of content, style, reporting staff, and ownership.

211. **Hill, Charles H., & Methot, Kathleen.** Making an important transition. *Elementary English*, September 1974, *51*, 842-845. (V-5)

Assesses the effectiveness of a 3-week program of individualized reading following the initial reading instruction, which had a primary decoding emphasis, by comparing the 9 lowest and 9 top first grade readers in an urban school serving an economically deprived population.

212. **Hiller, Jack H.** Learning from prose text: effects of readability level, inserted question difficulty, and individual differences. *Journal of Educational Psychology*, April 1974, *66*, 202-211. (IV-5)

Examines the effect of questions inserted in text on immediate and delayed retention, retention of incidental information, and difficulty level of material in more than 600 college subjects; also investigates the relationship between adjunct questions and personological variables.

213. **Hillerich, Robert L.** Accountability and the teaching of reading. *Elementary English*, May 1975, 52, 681-687, 700. (I-14)

Discusses results of selected outcome studies using contingency management and performance contracting in relationship to surveys of accountability practices and issues.

214. **Hillman, Judith Stevenson.** An analysis of male and female roles in two periods of children's literature. *The Journal of Educational Research*, October 1974, *68*, 84-88. (III-2)

Compares depictions of males and females in children's books published in the 1930's and 1963-1973.

215. **Hirshoren, Alfred; Hunt, Jacob T.; & Davis, Caroline.** Classified ads as reading material for the educable retarded. *Exceptional Children*, September 1974, *41*, 45-47. (III-3)

Assesses the readability of classified ads in 5 Southern Newspapers; gives recommendations for instruction in reading such material.

216. **Hoffman, Louis G.** The relationship of basic visual skills to school readiness at the kindergarten level. *Journal of the American Optometric Association*, May 1974, *45*, 608-614. (IV-1)

Tests 30 kindergarten pupils to determine if a relationship exists between a set of visual skills tests and school readiness.

217. **Hoiberg, Anne; Hysham, C. J.; & Berry, N. H.** The neuropsychiatric implications of illiteracy—20 years later. *Journal of Clinical Psychology*, October 1974, *30*, 533-535. (IV-13)

Replicates and extends an earlier study comparing frequency of Navy discharges of illiterates for neuropsychiatric reasons to base rates. Data were collected on 1,518 illiterate recruits and 1,520 controls selected from the same training companies.

218. **Holland, Norman N.** *5 readers reading*. New Haven: Yale University Press, 1975. (IV-14)

Examines how personality affects reading and interpreting literature. Subjects were 5 college students administered a battery of psychological tests and interviewed regarding their reactions to a number of famous short stories.

219. **Holt-Hansen, Kr.** A new method of investigating symptoms of dyslexia. *International Review of Applied Psychology*, April 1968, *17*, 33-49. (IV-6)

Reports results of a study which used 45 dyslexics and normals, ranging in age from 9 to 53, to assess the Hering-Illusion as a possible test for dyslexia.

220. **Hoon, Peter W.** Efficacy of three common study methods. *Psychological Reports*, December 1974, *35*, 1057-1058. (V-8)

Uses analysis of covariance in assessing the effectiveness of reading, reading with underlinings, and reading with note taking on multiple choice comprehension tests to control estimations of intelligence. Subjects were 30 undergraduate males.

221. **Hops, Hyman, & Cobb, Joseph A.** Initial investigations into academic survival-skill training, direct instruction, and first-grade achievement. *Journal of Educational Psychology*, August 1974, *66*, 548-553. (V-5)

Studies 81 grade 1 children who were assigned to one of 3 treatment groups: control, direct instruction, and group survival skill training. The effects of each approach on reading achievement was compared.

222. **Horton, T. R.** *The reading standards of children in Wales.* Bootle, Lancs: John Gardner, 1973. (V-2)

Compares reading comprehension of Welch children surveyed in 1970-71, 1960, 1956-57, and English and Welch children surveyed in 1952 and 1948. Discusses the achievement test used, bilingualism, and critiques the design.

223. **Hoskisson, Kenneth.** Successive approximation and beginning reading. *The Elementary School Journal*, April 1975, 75, 442-451. (I-3)

Describes 3 stages in learning to read observed in studies of the influence of assisted reading on progress and achievement.

224. **Huberty, Carl J., & Swan, William W.** Preschool classroom experience and first-grade achievement. *The Journal of Educational Research*, March 1974, 67, 311-316. (V-3)

Explores the commonalities between measures administered prior to grade 1 and those obtained at the end of grade 1. Two groups of children, one entering the experimental program at age 3 and the other at age 6, were studied.

225. **Hunt, Barbara Carey.** Black dialect and third and fourth graders' performance on the *Gray Oral Reading Test. Reading Research Quarterly*, 1974-1975, *10(1)*, 103-123. (IV-7)

Investigates the influence of black dialect on the oral reading performance of the test scores of 65 innercity third and fourth grade pupils.

226. **Hurley, Oliver L.** Reading comprehension skills *vis-à-vis* the mentally retarded. *Education and Training of the Mentally Retarded*, February 1975, *10*, 10-14. (I-6)

Reviews selected studies on reading comprehension skills of educable mentally retarded children with respect to which skills, in what hierarchy, and at what age or level they should be taught to such children.

227. **Hurwitz, Irving; Wolff, Peter H.; Bortnick, Barrie D.; & Kokas, Klara.** Nonmusical effects of the Kodaly music curriculum in primary grade children. *Journal of Learning Disabilities*, March 1975, 8, 167-174. (V-5)

Follows up 20 white middleclass kindergarteners who had received 7 months of daily music instruction and compares their first and second grade reading achievement and other test results to that of a matched group of controls.

228. **HUSLIN, RONALD A.** What's happening in college and university developmental reading programs: report of a recent survey. *Reading World*, March 1975, *14*, 202-214. (V-8)

Discusses and analyzes findings from a questionnaire related to various aspects of the reading program. Data are based on 177 returned questionnaires.

229. **HYMAN, HERBERT H.** Mass communication and socialization. In W. Phillips Davison & Frederick T. C. Yu (Eds.) *Mass communication research: major issues and future directions*. New York: Praeger, 1974. Pp. 36-65. (I-10)

Describes selected studies on readership and content analyses of varieties of books in addition to non-print mass communication in order to illustrate influences on the development of human values.

230. **ILIKA, JOSEPH.** A critical review of research on teacher readership characteristics and implications for performance-based teaching. In Phil L. Nacke (Ed.) Interaction: research and practice for college-adult reading. *Twenty-third Yearbook of the National Reading Conference*. Pp. 131-139. (I-14)

Reviews 85 professional and popular publications on the quantity, quality, and variety of the reading that teachers do.

231. **INGERSOLL, GARY M., & JOHNSON, PATRICIA.** Attitudes and reading comprehension: a preliminary investigation. *Reading Improvement*, Fall 1974, *11*, 52-56. (IV-14)

Examines the interaction between 2 personality traits—locus of control and text anxiety—and reading comprehension in 41 third graders.

232. **JACKSON, BARRY, & VAN ZOOST, BRENDA.** Self-regulated teaching of others as a means of improving study habits. *Journal of Counseling Psychology*, November 1974, *21*, 489-493. (V-8)

Uses analysis of variance of 2 study habit inventories to compare effectiveness of self-reinforcement to self-reinforcement plus teaching study habits to others. Subjects were 30 college students enrolled in an 8-session study skills program; half were randomly assigned to each condition.

233. **JACKSON, JOYCE, & AYRER, JAMES.** Sickle cell trait and scholastic achievement. *The Journal of Negro Education*, Fall 1974, *43*, 452-456. (IV-12)

Compares standardized achievement of 29 children with sickle cell hemoglobin (from 1,806 eighth and ninth graders tested) to a control group. Subjects' achievement had been tested consecutively in fourth through seventh grades.

234. **Jantz, Richard K.** The effects of sex, race, IQ and SES on the reading scores of sixth graders for both levels and gains in performance. *Psychology in the Schools*, January 1974, *11*, 90-94. (IV-12)

Correlates a number of cognitive, biological, and sociological variables in more than 3,000 sixth graders in an attempt to determine the relative effect of these variables on reading.

235. **Jay, Winifred T., & Schminke, Clarence W.** Sex bias in elementary school mathematics tests. *The Arithmetic Teacher*, March 1975, 22, 242-246. (III-2)

Tallies frequency of famous men versus women, and male versus female occupations and roles. Uses 81 second, fourth, and sixth grade children and 30 parents to rate textbook-presented situations according to gender.

236. **Jenkins, Joseph R.; Mayhall, William F.; Peschka, Corinne; & Townsend, Verlinda.** Using direct and daily measures to increase learning. *Journal of Learning Disabilities*, December 1974, 7, 605-608. (V-11)

Compares the effect of tutoring with and tutoring without performance charting on 6 learning disabled children's word recognition. The subjects, ages 6 to 9, served as their own controls.

237. **Jensema, Carl J.** A note on the achievement test scores of multiply-handicapped hearing impaired children. *American Annals of the Deaf*, February 1975, *120*, 37-39. (VI)

Analyzes standardized academic achievement scores of 16,822 hearing impaired students subdivided into 11 groups according to presence of one and only one additional specific handicap. Mean age of subgroups varied from 12.6 to 14.8.

238. **Johns, Jerry L.** Concepts of reading among good and poor readers. *Education*, Fall 1974, *95*, 58-60. (IV-12)

Categorizes 103 fourth and fifth graders' definitions of reading as meaningful or non-meaningful, and tests for a relationship between definition and reading achievement. Final N was 36 good and 29 poor readers.

239. **Johns, Jerry L.** Dolch list of common nouns—a comparison *The Reading Teacher*, March 1975, 28, 538-540. (V-9)

Compares the Dolch 95 common nouns list with 4 recently published word lists.

240. **Johns, Jerry L.** Reading preferences of intermediate-grade students in urban settings. *Reading World*, October 1974, *14*, 51-63. (IV-16)

Uses a questionnaire accompanying slide illustrations of settings and people and complementary verbal descriptions in order to investigate stated reading preferences of 597 mostly minority group fourth, fifth, and sixth graders in 4 Midwestern cities.

241. **JOHNS, JERRY L.** Reading preferences of urban students in grades four through six. *The Journal of Educational Research*, April 1975, 68, 306-309. (III-4)

Uses a multiple choice questionnaire describing stories to investigate preferences of 597 middle school children (515 blacks) for illustrations, settings, and characters similar to and different from their own environment.

242. **JOHNSON, JOSEPH C., II; PHILLIPS, GEORGE O., SR.; & SUBLETT, HENRY L., JR.** An inventory of reading courses and practices in major black institutions. In Phil L. Nacke (Ed.) Interaction: research and practice for college-adult reading. *Twenty-third Yearbook of the National Reading Conference*. Pp. 293-295. (II)

Reports survey results from 36 of 80 institutions that were mailed questionnaires on availability and emphases of undergraduate reading methods courses.

243. **JONES, W. PAUL, & DEBLASSIE, RICHARD R.** Prediction of performance by low achievers: the use of non-verbal measures. *California Journal of Educational Research*, January 1975, 26, 11-15. (V-12)

Compares reading and arithmetic achievement of 2 groups, each of sixth (N = 58) and eighth (N = 123) graders who, the previous year, had been equivalent on reading and math (low) and different on spatial abilities.

244. **JONGSMA, EUGENE.** An analysis of the language patterns of standardized reading comprehension tests and their effect on student performance. *Journal of Reading Behavior*, December 1974, 6, 353-366. (IV-9)

Rewrites 40 fourth grade level passages from 8 standardized tests to conform to oral language patterns used frequently by fourth graders. Analyzes test results from 176 fourth graders randomly assigned to standardized and rewritten versions and classified by sex, chronological age, IQ, and reading achievement.

245. **JORDAN, BRIAN.** The Jordan left right reversal test. *Journal of Learning Disabilities*, January 1975, 8, 10-12. (V-12)

Reviews a new test of letter and number reversals standardized on over 3,000 normal children, IQ's 85 or over, ages 6 through 10.

246. **Jorgenson, Gerald W.** An analysis of teacher judgments of reading level. *American Educational Research Journal*, Winter 1975, *12*, 67-75. (II)

Compares estimates of grade level equivalence of reading passages from 57 urban and 27 suburban elementary school teachers. Discusses teachers' internalized norms in relation to their expectancies and student populations.

247. **Jorgenson, Gerald W., & Hyde, Elizabeth.** Auditory-visual integration and reading performance in lower-social-class children. *Journal of Educational Psychology*, October 1974, *66*, 718-725. (IV-4)

Examines relationships among reading achievement, grade, sex, IQ, and modality preference in 86 first and second graders with primarily lower-class backgrounds.

248. **Kabak, Wayne.** Career Ed: does it open or close the door? *Interracial Books for Children Bulletin*, 1975, *6*(2), 1, 4, 5, 8. (III-2)

Reports analysis of 100 career education materials focusing on racist content.

249. **Kahn, Norma B.** A valuable review of factors related to achievement in reading. *Reading Improvement*, Spring 1974, *11*, 2-6. (I-14)

Lists and discusses 9 basic factors, and many subfactors, related to success in reading.

250. **Kamm, Karlyn; Otto, Wayne; & Dulin, Kenneth L.** The evaluation of reading improvement workbooks. In Phil L. Nacke (Ed.) Interaction: research and practice for college-adult reading. *Twenty-third Yearbook of the National Reading Conference*. Pp. 243-248. (V-9)

Assesses guessability of speed reading comprehension questions through pretesting, improvement of scores after reading, difficulty of items and of selections read. Subjects were 22 university students.

251. **Kaplan, Robert, & Rothkopf, Ernst Z.** Instructional objectives as directions to learners: effect of passage length and amount of objective-relevant content. *Journal of Educational Psychology*, June 1974, *66*, 448-456. (V-7)

Investigates intentional and incidental learning by reading in 2 studies, using texts varying in length and in number and type of objectives specified. A total of 666 high school students participated.

252. **Kaplan, Robert, & Simmons, Francine G.** Effects of instructional objectives used as orienting stimuli or as summary/

review upon prose learning. *Journal of Educational Psychology*, August 1974, *66*, 614-622. (IV-5)

Tests intentional and incidental learning as a function of presenting objectives before or after a reading passage, with and without relevant information. Subjects were 300 senior high school students.

253. **Karnes, Merle B.** Evaluation and implications of research with young handicapped and low-income children. In Julian C. Stanley (Ed.) *Compensatory Education for Children, Ages 2 to 8*. Baltimore: The Johns Hopkin University Press, 1973. Pp. 109-144. (I-6)

Summarizes results of several followup studies of 5 preschool intervention programs for mentally retarded in terms of IQ, language development, reading achievement, and personal adjustment.

254. **Katz, Elihu; Blumler, Jay G.; & Gurevitch, Michael.** Uses of mass communication by the individual. In W. Phillips Davison & Frederick T. C. Yu (Eds.) *Mass communication research: major issues and future directions*. New York: Praeger, 1974. Pp. 11-35. (I-10)

Traces historical developments in research on how the individual experiences and uses mass media in a framework of needs gratifications. Presents implications for research policy and media policy.

255. **Keele, Doman K.; Keele, Marjorie S.; Huizinga, Raleigh J.; Bray, Nancy; Estes, Robert; & Holland, Lana.** Role of special pediatric evaluation in the evaluation of a child with learning disabilities. *Journal of Learning Disabilities*, January 1975, *8*, 47-52. (IV-13)

Compares pediatrician learning disabled/non-learning disabled classifications of 60 randomly selected third graders with team classifications. Attempts to cross-validate the pediatric signs on another group of 29 learning disabled children, ages 6 to 12.

256. **Kelly, Ann Marie.** Sight vocabularies and experience stories. *Elementary English*, March 1975, *52*, 327-328. (V-11)

Compares word recognition pretests and post tests of 2 groups of third grade remedial readers—32 instructed through basal readers and 32 instructed through language experience.

257. **Kendall, Mary T.** Construction of a comprehensive reading programme from a combination of published reading schemes. *Educational Research*, November 1973, *16*, 20-27. (V-9)

Analyzes vocabulary of 37 British instructional programs and presents an integrated list of published materials suitable for the wide range of ability of children in elementary school.

258. Kennedy, Delores Kessler, & Weener, Paul. Visual and auditory training with the cloze procedure to improve reading and listening comprehension. *Reading Research Quarterly*, Summer 1973, *8*, 524-541. (V-5)

Tests 80 third grade pupils (reading levels 1.9-3.5) for the effect of individual training with the cloze procedure on reading and listening comprehension.

259. Kennedy, Larry D., & Halinski, Ronald S. Measuring attitudes: an extra dimension. *Journal of Reading*, April 1975, *18*, 518-522. (IV-12)

Describes the development of an inventory of attitudes toward reading, using 977 high school students and their teachers for validation. Lists all 70 items.

260. Kershner, John R. Visual-spatial organization and reading: support for a cognitive-developmental interpretation. *Journal of Learning Disabilities*, January 1975, *8*, 37-43. (IV-13)

Compares the effectiveness of 2 conceptually different tests of visualization to differentiate good and poor readers in one second grade containing 20 middleclass children.

261. Kinnamon, Sue E. Commercial television and adult reading. *Journal of Reading*, March 1975, *18*, 470-474. (III-7)

Reports survey findings on United States and Canadian TV programing of reading instruction for adults. Lists the entire sample of 206 stations, indicating the 56 respondents.

262. Kirsch, Dorothy. From athletes to zebras—young children want to read about them. *Elementary English*, January 1975, 52, 73-78. (IV-16)

Categorizes expressed reading interests of 1,078 first and second grade children and tests for differences by sex, IQ, reading level, and demographic variables.

263. Klare, G. R.; Sinaiko, H. W.; & Stolurow, L. M. The cloze procedure: a convenient readability test for training materials and translations. *International Review of Applied Psychology*, October 1972, *21*, 77-106. (IV-17)

Reviews research with the cloze procedure in terms of readability and comprehension; then reports 2 studies using a total of 182 adults in assessing the utility of the cloze with training materials and foreign language instruction.

264. Klare, George R. Assessing readability. *Reading Research Quarterly*, 1974-1975, *10(1)*, 62-102. (I-7)

Reviews readability formulas and related predictive devices since 1960.

265. **KLASEN, EDITH.** *The syndrome of specific dyslexia: with special consideration of its psychological, psychopathological, testpsychological, and social correlates.* Baltimore: University Park Press, 1972. (IV-13)

Investigates relationships between dyslexia and a variety of physical, psychological, and environmental factors based on a sample of 500 applicants to a private reading institute. Subjects were 6 to 19 year olds, mostly middleclass, and included over twice as many boys as girls.

266. **KNAFLE, JUNE D.** Color cues in word perception. *Journal of Reading Behavior*, September 1974, *6*, 233-247. (IV-8)

Presents results of 2 matching-to-sample experiments using color cues in consonant-vowel-consonant stimulus words with 412 kindergarten to third grade subjects randomly assigned to experimental and control groups.

267. **KOENKE, KARL.** What do they mean by saying "We want a reading specialist"? *Journal of Reading*, May 1975, *18*, 606-609. (II)

Categorizes and analyzes comments made by 133 of 303 English Department heads who had checked "yes" and 8 who had checked "no" to a survey question on the desirability of reading specialist services.

268. **KOPPITZ, ELIZABETH MUNSTERBERG.** Bender Gestalt test, visual aural digit span test and reading achievement. *Journal of Learning Disabilities*, March 1975, *8*, 154-157. (IV-6)

Compares the ability of 2 tests, visual-motor and visual-aural memory, to differentiate learning disabled children who could (N = 23) and could not (N = 23) read. Subjects were middleclass 8 and 9 year olds and included a group of 30 normal children.

269. **KORAN, MARY LOU, & KORAN, JOHN J., JR.** Interaction of learner aptitudes with question pacing in learning from prose. *Journal of Educational Psychology*, February 1975, *67*, 76-82. (IV-5)

Reports an aptitude by treatment experiment testing the relationship between verbal ability and retention of a 5,000-word passage presented with frequent, infrequent, or no questions inserted. Subjects were 93 psychology students randomly assigned to one of the 3 conditions.

270. **Kretschmer, Joseph C.** Toward a Piagetian theory of reading comprehension. *Reading World*, March 1975, *14*, 180-187. (IV-3)

Interprets frequent errors on items in primary level reading comprehension tests in terms of a developmental model of thinking in reading.

271. **Kroll, Herman M.** The relative effectiveness of written and individualized audio instruction in the intermediate grades. *AV Communication Review*, Fall 1974, 22, 247-268. (V-6)

Reports an experiment testing for aptitude-mode of presentation interaction in learning science. Subjects were 120 fifth and sixth graders divided at the median into high and low reading groups.

272. **Kroll, Robert M., & Hood, Stephen B.** Differences in stuttering adaptation between oral reading and spontaneous speech. *Journal of Communication Disorders*, September 1974, 7, 227-237. (VI)

Compares stuttering recorded during 5 successive reading and extemporaneous speech tasks performed successively in counterbalanced order by 10 male stutterers, ages 15-30.

273. **Kurtz, P. D.** The effect of instructional objectives on student learning. *The Alberta Journal of Educational Research*, December 1974, *20*, 327-333. (IV-5)

Compares learning of a prose passage by 73 sixth graders randomly assigned to practice in objectives with that of the 67 no practice controls. Subjects were oriented to read either for recognition, recall, or application but were given the same test of learning.

274. **Kurzman, Maurice.** The reading ability of college freshmen compared to the readability of their textbooks. *Reading Improvement*, Fall 1974, *11*, 13-25. (III-3)

Looks at the relationship between 81 beginning college subjects, who were at least 2 years retarded in reading, and the readability level of 23 social sciences textbooks.

275. **Laird, A. W., & Cangemi, Joseph P.** When are children ready to learn to read? *Reading Improvement*, Spring 1975, *12*, 47-49. (I-2)

Refers to a variety of anecdotal, biological, and scientific reports regarding people who learned to read before age 6.

276. **Lane, Alaine.** Severe reading disability and the initial teaching alphabet. *Journal of Learning Disabilities*, October 1974, 7, 479-483. (V-11)

Describes the instructional program for and assesses the effects of 100 days of remedial reading using i.t.a. with 14 minority group sixth graders.

277. Lane, Helen S., & Baker, Dorothea. Reading achievement of the deaf: another look. *The Volta Review*, November 1974, *76*, 489-499. (VI)

Compares reading scores of 132 former pupils of Central Institute for the Deaf, ages 10 to 16, with reading achievement scores from other studies.

278. LaPorte, Ronald E., & Voss, James F. Retention of prose materials as a function of postacquisition testing. *Journal of Educational Psychology*, April 1975, *67*, 259-266. (IV-5)

Analyzes the effect on one-week retention of a 1,500-word passage with and without feedback, after rereading specific statements, with no post-reading activity. There were 168 subjects.

279. Lawrence, Denis. Remedial reading and counselling. *Reading (UKRA)*, March 1975, *9*, 12-17. (IV-14)

Describes 3 studies assessing the effects of combinations of remedial reading help and individual counseling on reading attainment and self-image. Subjects were junior age children whose reading achievement was at least 2 levels below their chronological age.

280. Lefton, Lester A., & Spragins, Anne B. Orthographic structure and reading experience affect the transfer from iconic to short-term memory. *Journal of Experimental Psychology*, October 1974, *103*, 775-781. (IV-5)

Reports a developmental study of word processing using 8-letter, first- and fourth-order English word approximations, varying time and part of "word" masked. Subjects were first, third, fifth grade, and college students without reading, vision, or emotional problems.

281. Lent, John A. Mass media in Laos. *Gazette*, 1974, *21(3)*, 171-179. (III-11)

Describes orientation, circulation, administration, and working conditions of the press, radio, and TV in Laos. Includes case studies of several newspapers.

282. Leton, Donald A. Computer simulation of reading: a progress report. *Journal of Reading Behavior*, July 1974, *6*, 131-141. (V-9)

Describes a computerized algorithm for reading. Presents samples of its processing of various texts, a portion of a conditional association matrix, and comparisons of the total occurrences of the graphic units in several first grade readers in order to illustrate its research implications.

283. **Lewels, Francisco J., Jr.** *The uses of the media by the Chicano movement: a study in minority access.* New York: Praeger Publishers, 1974. (III-1)
Deals with changing patterns in control of national, local, and Spanish language press. Considers coverage of civil liberties and human rights issues, and public response to such coverage.

284. **Lewis, I. M.** Literacy in a nomadic society: the Somali case. In Jack Goody (Ed.) *Literacy in traditional society.* Cambridge, England: The University Press, 1968. Pp. 266-276. (III-7)
Looks at the role of writing among the Somali pastoralists of the Horn of Africa.

285. **Lewis, John.** A study of the validity of the Metropolitan Readiness Tests. *Educational and Psychological Measurement,* Summer 1974, *34*, 415-416. (V-12)
Correlates results of readiness tests for 40 children administered at the end of kindergarten with teacher ratings of pupil success and with reading test results at the end of first grade.

286. **Lewis, John, & Grangaard, George.** Preschool experience and kindergarten readiness for disadvantaged children. *The Minnesota Reading Quarterly,* May 1975, *19*, 154-156 (V-4)
Compares readiness test results of 27 disadvantaged children who had been in a Title I nursery school program with those of 65 controls.

287. **Lewy, Arich, & Davis, D.** What can students read? The level of reading mastery in Israeli schools. *Comparative Education Review,* June 1974, *18*, 248-261. (V-2)
Uses a mastery criterion of 80 per cent correct answers to assess literal and inferential comprehension of 8 reading passages by students in elementary (regular or for disadvantaged) and secondary (academic or vocational) Israeli schools.

288. **Liberman, Isabelle Y.; Shankweiler, Donald; Fischer, F. William; & Carter, Bonnie.** Explicit syllable and phoneme segmentation in the young child. *Journal of Experimental Child Psychology,* October 1974, *18*, 201-212. (IV-7)
Uses learning of a tapping task to study development of the ability to segment spoken utterance into abstract speech units. Subjects were 135 white, middleclass children in nursery school, kindergarten, and first grade.

289. **Lichtman, Marilyn.** The development and validation of R/EAL, an instrument to assess functional literacy. *Journal of Reading Behavior,* July 1974, *6*, 167-182. (V-12)

Describes construction of a 45-item, content-referenced reading test based on task analyses of 9 areas of typical daily reading activities. The validation sample included 434 Job Corps enrollees, ages 16 to 21.

290. **Lillywhite, Herold.** Can reading problems be predicted? In Malcolm P. Douglass (Ed.) Reading between and beyond the lines. *Claremont Reading Conference 37th Yearbook*, 1973. Pp. 181-189. (I-6)

Combines research and opinion which was perceived as supporting the position that reading difficulties can be predicted as early as age 3.

291. **Limmer, W. W.**, *et al.* Remedial reading: a survey in North Bedfordshire. *Reading* (UKRA), June 1974, *8*, 33-39. (V-11)

Reports results of a survey of opinions about remedial reading, based on 63 returned questionnaires.

292. **Lindley, William R.** Gatekeepers' avoidance of group opinion sources. *Journalism Quarterly*, Winter 1974, *51*, 724-725. (III-9)

Uses a questionnaire sent to 10 Associated Press wire editors to determine their opinion on why certain stories have no value for local readers and to determine what their knowledge of the local community is.

293. **Lloyd, Bruce A., & Cobbs, Linda.** A second grade experiment with a new reading-language process. *Reading Horizons*, Spring 1975, *15*, 142-146. (V-5)

Compares post-treatment, standardized reading achievement gains of a control group of second graders with 24 second graders given 12 weeks of instruction twice weekly. The instruction used coordinated picture and vocabulary cards to tell, write, or draw a story.

294. **Lockridge, Kenneth A.** *Literacy in Colonial New England.* New York: W. W. Norton, 1974. (III-7)

Analyzes the forces raising literacy rates in New England circa 1650-1800. Assesses the levels of literacy as indicated by documents such as wills and marriage records, and by historical events.

295. **Long, Huey B., & Agyekum, Stephen K.** Adult education 1964-73: reflections on a changing discipline. *Adult Education (USA)*, Winter 1974, *24*, 99-120. (III-2)

Assesses trends in adult education indicated by categorizing kinds, content, and contributors of 161 articles written by 163 different authors and published in *Adult Education* during 1964-1973.

296. LOWE, A. J., & FOLLMAN, JOHN. Comparison of the Dolch list with other word lists. *The Reading Teacher*, October 1974, *28*, 40-44. (V-9)

Presents intercorrelations of the first 150 Dolch words with 4 widely used common word lists as well as rankings of these words compared to their rankings on 7 other common word lists.

297. LOWELL, ROBERT, & VITRO, FRANK. The effects of meaning and sequence of presentation on responses to visual stimuli. *The New England Reading Association Journal*, 1975, *10*(2), 15-19, 57-58. (IV-5)

Investigates differential effects of brief visual presentation of words, letter strings, and digit series on short term memory of 141 children, ages 7-9.

298. LUNA, ERMALINDA. DISTAR language and reading programs: Effects upon SESAT scores. *Colorado Journal of Educational Research*, Fall 1974, *14*, 2-5. (V-3)

Compares achievement of 2 kindergarten classes randomly assigned to receive the DISTAR reading and language programs daily for 6 months with 2 control kindergarten classes. Subjects included 88 children in 4 Title I schools.

299. LUND, PAUL A., & IVANOFF, JOHN M. Correspondence of self-concept measures with levels of reading achievement. *Journal of Reading Behavior*, July 1974, *6*, 159-165. (IV-14)

Investigates personality differences among 227 incoming college freshmen, grouped according to sex, reading achievement, and enrollment in a reading skills program.

300. LUNDSTEEN, SARA W. Levels of meaning in reading. *The Reading Teacher*, December 1974, *28*, 268-272. (IV-8)

Assesses frequency of abstract, functional, and concrete responses on multiple choice word meaning and paragraph meaning tests. Subjects were 79 third and 111 sixth graders.

301. LUTZ, JOHN. Some comments on psycholinguistic research and education. *The Reading Teacher*, October 1974, *28*, 36-39. (V-9)

Documents syntax appearing in 25 basal readers from 10 series.

302. MACDONALD-ROSS, MICHAEL, & WALLER, ROBERT. Criticism, alternatives and tests: a conceptual framework for improving typography. *Journal of Applied Programmed Learning and Educational Technology*, March 1975, *12*, 75-83. (I-7)

Reviews legibility research and presents a practical 3-part cyclical research model using the know-how of typographers and designers illustrated by a critical analysis of college texts.

303. **Machowsky, Herbert, & Meyers, Joel.** Auditory descrimination, intelligence, and reading achievement at grade 1. *Perceptual and Motor Skills*, April 1975, *40*, 363-368. (V-12)

Reports correlation coefficients for standardized tests of auditory discrimination, intelligence, and reading achievement administered to 78 white, middleclass first graders.

304. **Mackworth, Jane F., & Mackworth, N. H.** How children read: matching by sight and sound. *Journal of Reading Behavior*, September 1974, *6*, 295-303. (IV-8)

Investigates relationships between reading achievement and matching for visual or auditory similarity using pairs of upper and lower case letters, homophones, and pictures. Over 70 children ages 7 to 12 participated.

305. **Macleod, Jennifer S., & Silverman, Sandra T.** *You won't do: what textbooks on U. S. Government teach high school girls.* Pittsburgh: Know Inc., 1973. (I-5)

Analyzes the content in 8 popular high school textbooks in regard to treatment of women. Annotates over 150 sources on sexism in textbooks, including studies, educational kits, and films.

306. **Maitland, Suzanne; Nadeau, J. B. E.; & Nadeau, Gretchen.** Early school screening practices. *Journal of Learning Disabilities*, December 1974, *7*, 645-649. (V-12)

Reports survey results of a representative sample of 980 school districts (581 responding) delineating type and use of screening of pupils entering kindergarten or first grade.

307. **Maliphant, R.; Supramaniam, S.; & Saraga, E.** Acquiring skill in reading: a review of experimental research. *Journal of Child Psychology and Psychiatry*, July 1974, *15*, 175-185. (I-13)

Summarizes and collates recent experimental studies of perceptual and higher order cognitive processes relating to reading in children: includes evaluation and suggestions for further research.

308. **Malmquist, Eve.** An international overview of primary reading practices. *Journal of Reading*, May 1975, *18*, 615-624. (I-3)

Discusses beginning reading based on research conducted in many countries with respect to child's age, the relationship of one's language to the orthography used, and teaching methods.

309. Malone, Daniel R., & Christian, Walter P., Jr. Adaptive behavior scale as a screening measure for special-education placement. *American Journal of Mental Deficiency,* January 1974, *79,* 367-371. (VI)

Investigates relationships among academic achievement scores, IQ, and a measure of daily living skills. Subjects were 126 mentally retarded individuals, ages 5 to 23.

310. Malaya, Simoni. Tanzania's literacy experience. *Literary Discussion,* Spring 1975, *6,* 45-68. (III-7)

Discusses results of literacy surveys and adult education projects. Presents pre-1969 data and progress information since then.

311. Manheim, Jarol B. Urbanization and differential press coverage of the congressional campaign. *Journalism Quarterly,* Winter 1974, *51,* 649-653, 669. (III-2)

Evaluates whether or not the quantity and quality of newspaper coverage of congressional campaigns varies with the degree of urbanization of the district. Uses about 1,500 issues of 26 newspapers from 5 districts as the data source.

312. Mann, Leon. Counting the crowd: effects of editorial policy on estimates. *Journalism Quarterly,* Summer 1974, *51,* 278-285. (III-9)

Compares "hawkish" and "dovish" newspapers' estimates of crowds at 2 anti-war demonstrations. Two research assistants classified the papers reporting on one demonstration (16 hawkish, 6 dovish) and 24 social relations students rated papers reporting on the other (10 pro-rally, 17 anti-rally).

313. Marcel, Tony. The effective visual field and the use of context in fast and slow readers of two ages. *British Journal of Psychology,* November 1974, *65,* 479-492. (IV-11)

Examines the amount read from the second of 2 successive fixations by 15 adults before and 15 adults after taking a "speed-reading" course and by 24 fast and 24 slow 11-year-old readers.

314. Marco, Gary L. A comparison of selected school effectiveness measures based on longitudinal data. *Journal of Educational Measurement,* Winter 1974, *11,* 225-234. (V-12)

Uses results of standardized reading achievement tests administered to 3,769 children at the beginning and end of third grade to calculate a variety of school effectiveness indices. Reports their intercorrelations with variables such as pupil-teacher ratio.

315. Marwit, Samuel J., & Neumann, Gail. Black and white children's comprehension of standard and nonstandard English

passages. *Journal of Educational Psycholcgy*, June 1974, 66, 329-332. (IV-9)

Investigates relationships among reading test format (standard and non-standard English), examiner race (2 black and 2 white), and testee race (60 black and 53 white second graders).

316. **MAXWELL, A. E.; FENWICK, P. B. C.; FENTON, G. W.; & DOLLIMORE, J.** Reading ability and brain function: a simple statistical model. *Psychological Medicine*, August 1974, 4, 274-280. (IV-3)

Uses factor analyzed intelligence test scores from 150 seven year olds divided into above and below average readers to generate predictions of EEG responses of 2 groups of 52 fourteen-year-old males divided into above and below average readers.

317. **MAYNOR, WALTZ, & KATZENMEYER, W. G.** Academic performance and school integration: a multi-ethnic analysis. *The Journal of Negro Education*, Winter 1974, 43, 30-38. (V-11)

Determines whether statistically significant differences occur in the measured achievement of a group of black, Indian, and white children in a newly-integrated tri-racial system in grades 6-12. Also studies the effect of teacher race and ethnic group on performance of students.

318. **MAYS, DERIL K.** The experimental analysis of error behavior in oral reading. In Phil L. Nacke (Ed.) Interaction: research and practice for college-adult reading. *Twenty-third Yearbook of the National Reading Conference*. Pp. 140-152. (V-11)

Uses 24 high school dropouts to study oral reading. Instructors simply monitored the reading process under one of 2 reinforcement schedules, interrupting only to correct errors according to one of 3 learning paradigms.

319. **MAZURKIEWICZ, ALBERT J.** Comparative attitudes and achievements of the 1963 i.t.a. and t.o. taught students in the tenth and eleventh grades. *Reading World*, May 1975, *14*, 242-251. (V-5)

Reports a followup of 282 i.t.a. and 591 T.O.-taught children (62 per cent of the original first year group) to compare senior high school academic achievement, attitudes, and time spent on reading and language arts activities.

320. **MAZURKIEWICZ, ALBERT J.** What do teachers know about phonics. *Reading World*, March 1975, *14*, 165-177.

Reports results from 4 different tests of phonics principles, generalizations, and definitions given to a total of 370 teachers of grades kindergarten through 6.

321. **McBrien, Robert J.** Practically speaking: readability of career literature. *The Vocational Guidance Quarterly*, June 1975, 23, 363-365. (V-9)

Reports grade level readability estimates of 12 vocational texts, such as job briefs and biographies published by the government and industry.

322. **McCombs, Maxwell E.** Mass communication in political campaigns: information, gratification, and persuasion. In F. G. Kline & P. J. Tichenor (Eds.) *Current perspectives in mass communication research. Sage annual reviews of communication research, Vol. I.* Beverly Hills: Sage Publications, 1972. Pp. 169-194. (I-10)

Discusses conflicting findings in research on various factors believed to attenuate, influence, and mediate the effect of mass communication on voters.

323. **McConkie, G. W. & Meyer, Bonnie J. F.** Investigation of reading strategies: II. A replication of payoff condition effects. *Journal of Reading Behavior*, July 1974, 6, 151-158. (IV-5)

Replicates and extends a study of the influence of 4 variables on reading speed and comprehension, using 70 introductory psychology students randomly assigned to the control or to one of the experimental groups.

324. **McCormick, Marijo K., & Williams, Juanita H.** Effects of a compensatory program on self-report, achievement and aspiration level of "disadvantaged" high school students. *The Journal of Negro Education*, Winter 1974, 43, 47-52. (V-7)

Assesses changes in self concept, level of aspiration, and academic achievement, including reading, after a concentrated summer compensatory education program. Subjects were 54 white and 98 non-white high school students.

325. **McGuigan, F. J.** The function of covert oral behavior ('silent speech') during silent reading. *International Journal of Psycholinguistics*, 1973, 2, 39-47. (I-14)

Summarizes research on children and adults regarding the beneficial or detrimental effects of subvocalizing during silent reading.

326. **McLeod, Jack M.; Becker, Lee B.; & Byrnes, James E.** Another look at the agenda-setting function of the press. *Communication Research*, April 1974, *1*, 131-166. (III-14)

Reports a methodological study of issue emphasis in a liberal versus a conservative newspaper. Compares interview responses of a sample of 293 of the newspapers' readers to test the hypothesis that perceived issue salience is a function of media emphasis.

327. McLeod, Jack M., & O'Keefe, Garrett J., Jr. The socialization perspective and communication behavior. In F. G. Kline & P. J. Tichenor (Eds.) *Current perspective in mass communication research. Sage annual reviews of communication research, Vol. I.* Beverly Hills: Sage Publications, 1972. Pp. 121-168. (I-10)

Reviews research treating communication behavior as a dependent variable, using a model of socialization to synthesize findings.

328. McNeil, John D. False prerequisities in the teaching of reading. *Journal of Reading Behavior*, December 1974, 6, 421-427. (IV-8)

Selects 24 competent and 24 incompetent readers from 150 children, ages 7 to 9. Compares their performance on 15 reading objective-based tests.

329. McNinch, George; Kazelskis, Richard; & Cox, Jo Ann. Appropriate cloze deletion schemes for determining suitability of college textbooks. In Phil L. Nacke (Ed.) Interaction: research and practice for college-adult reading. *Twenty-third Yearbook of the National Reading Conference.* Pp. 249-253. (IV-17)

Investigates relationships among reading ability (2 levels), deletion patterns (fifth, seventh, or ninth words), and passage materials (4 content area sampled). Subjects were 184 basic psychology students.

330. Meggitt, M. Uses of literacy in New Guinea and Melanesia. In Jack Goody (Ed.) *Literacy in traditional society.* Cambridge, England: The University Press, 1968. Pp. 300-309. (III-7)

Describes the impact of literacy on a completely non-literate society in New Guinea and Melanesia.

331. Mehryar, A. H. The application of the GATB Tool Matching Scale to a group of Iranian workers and its correlations with age and literacy achievement. *International Review of Applied Psychology*, April 1973, 22, 105-111. (V-8)

Investigates the correlation among an industrial matching test, age, and reading level in 320 Iranian workers, ages 9 to 53.

332. Millar, Susanna. Effects of tactual and phonological similarity on the recall of Braille letters by blind children. *British Journal of Psychology*, May 1975, 66, 193-201. (VI)

Probes tactual recall by 48 blind children, ages 5-9 to 8-0 on serial lists containing one to 6 Braille letters, which varied in confusability of feel and name sound.

333. MILLER, HARRY B., & HERING, STEVE. Teacher's ratings—which reading group is number one? *The Reading Teacher*, January 1975, *28*, 389-391. (V-10)

Analyzes 26 first grader teachers' order of preference for teaching their children reading between pupil reading ability group and sex.

334. MILLER, JOHN W., & HINTZMAN, CHARLES A. Syntactic complexity of Newbery Award winning books. *The Reading Teacher*, May 1975, *28*, 750-756. (IV-17)

Applies synthetic measures of syntactic complexity to 500-word samples from 3 sections in 20 children's books using an inherent method of measuring syntactic complexity as criterion.

335. MILLER, LAWRENCE R. Predictive powers of multiple-choice and cloze-derived readability formulas. *Reading Improvement*, Spring 1975, *12*, 52-58. (V-9)

Cross validates 2 types of readability formulas on criterion tests eliciting responses similar to or different from those the formulas used. A total of 366 subjects participated.

336. MILLER, LAWRENCE R. Predictive powers of the Flesch and Bormuth readability formulas. *Journalism Quarterly*, Autumn 1974, 508-511. (III-3)

Tests hypotheses that multiple choice and cloze-based readability formulas predict equally well to a new cloze criterion test (N=36) and that both formulas predict equally well to a new multiple choice criterion test (N=195).

337. MILLER, SUSAN H. The content of news photos: women's and men's roles. *Journalism Quarterly*, Spring 1975, 52, 70-75. (III-2)

Compares the number of photos of males and females, the roles portrayed relative to the accompanying stories, and the sections where the pictures appeared in every eighth issue of 2 large newspapers for one year.

338. MILLER, WALLACE D., & FRENCH, SUSAN. Using the cloze procedure to determine the suitability of social science and science textbooks. In Phil L. Nacke (Ed.) Interaction: research and practice for college-adult reading. *Twenty-third Yearbook of the National Reading Conference*. Pp. 254-258. (V-9)

Ascertains textbook grade level corresponding to best cloze performance. Correlates cloze scores and standardized reading achievement. The 253 twelfth grade subjects were randomly assigned passages at one grade level (sixth, eighth, tenth, or twelfth) and one deletion pattern (fifth, seventh, or tenth word).

339. **MILOFSKY, CARL D.** Why special education isn't special. *Harvard Educational Review*, November 1974, *44*, 437-458. (V-11)

Uses interviews with program administrators, observations of meetings and of special education programs, and a survey of special education teachers to document the difficulties in diagnosing educational handicaps and developing appropriate special programs in schools.

340. **MITCHELL, KENNETH R., & PIATKOWSKA, OLGA E.** Characteristics associated with underachievement: targets for treatment. *Australian Psychologist*, November 1974, *9*, 19-41. (I-14)

Reviews 24 studies to relate results of achievement-related factors to underachievers. Formulates hypotheses regarding variables related to underchievement to facilitate selection of target behaviors for treatment.

341. **MOE, ALDEN J., & ARNOLD, RICHARD D.** Computer-assisted readability levels of twenty-five Newbery books. *Reading Improvement*, Spring 1975, *12*, 59-64. (V-9)

Reports 2 readability estimates for 25 award winning children's books.

342. **MONTGOMERY, JAMES E., & RITCHEY, S. J.** Home economics research: are we doing what we can? *Journal of Home Economics*, January 1975, *67*, 35-39. (III-2)

Categorizes 6,098 titles of research articles from 38 home economics journals according to subject.

343. **MOORHOUSE, A. J., & YULE, WILLIAM.** A comparison of the Neale and the Daniels and Diack Reading Tests. *Reading (UKRA)*, December 1974, *8*, 24-27. (V-12)

Reports intercorrelations among 3 standardized reading tests. Subjects were 16 boys and 16 girls in fourth grade from a working class area school.

344. **MORGAN, EDWIN W.** A clinical team approach to improving reading instruction in first grade. *Elementary English*, September 1974, *51*, 889-893. (II)

Evaluates the effect of providing teachers with extensive information from an interdisciplinary team on 24 beginning first graders expected to have learning difficulties. End of year achievement was compared with 28 "normals" in the same school and with 52 matched subjects from another school.

345. **MUEHL, SIEGMAR, & FORELL, ELIZABETH R.** A followup study of disabled readers: variables related to high school reading per-

formance. *Reading Research Quarterly*, 1973-1974, *9(1)*, 110-123. (V-11)

Investigates 43 individuals originally diagnosed as disabled readers and studies the relationship of IQ, CA, EEG, and parental background to high school reading performance.

346. **Muller, Al.** Thirty popular adolescent novels: a content analysis. *English Journal*, September 1974, *63*, 97-99. (III-2)

Presents themes and trends observed in currently popular adolescent fiction. Books were selected from those most frequently nominated by 48 librarians in 18 states.

347. **Muma, John R.; Perry, Mary Elizabeth Adams; & Gallagher, Joseph W.** Some semantic properties in sentence perception. *Psychological Reports*, August 1974, *35*, 23-32. (IV-9)

Tests the hypothesis that reading comprehension of sentences of similar syntax and systematically varied semantics differs according to the semantic manipulations (*e.g.*, animate/inanimate) using a sentence matching task and processing time. Subjects were 31 introductory psychology students.

348. **Murphy, Maureen Cartwright.** Academic implications of a high school entrance examination for economically disadvantaged and other students. *The Journal of Educational Research*, March 1974, *67*, 303-306. (V-7)

Compares the academic performance (reading, algebra, and weighted GPA's) over a 4-year period, using 3 groups of 160 students each, who were being admitted to high school by either an admissions test or a special summer program.

349. **Murphy, Richard T.** Assessment of adult reading competence. In Duane M. Nielsen and Howard F. Hjelm (Eds.) *Reading and career education*. Perspectives in Reading No. 19. Newark, Del.: International Reading Association, 1975. Pp. 50-61. (III-7)

Reports findings from a national survey of 5,073 adults interviewed regarding daily reading tasks and approximately 8,000 adults tested on functional reading performance.

350. **Myers, David S.** Editorials and foreign affairs in the 1972 presidential campaign. *Journalism Quarterly*, Summer 1974, *51*, 251-257, 296. (III-2)

Classifies content and partisanship in editorials in 10 leading newspapers over the 2 months prior to the 1972 presidential election.

351. **Nelson, Hazel E., & Warrington, Elizabeth K.** Developmental spelling retardation and its relation to other cognitive

abilities. *British Journal of Psychology*, May 1974, 65, 265-274. (IV-12)

Analyzes spelling errors of 121 children, ages 8 to 14, whose reading or spelling achievement was 2 or more years below age norms, to determine if verbal/performance IQ differences are related to reading and/or spelling errors.

352. NELSON, JACK. *Captive voices: high school journalism in America*. New York: Schocken, 1974. (III-10)

Uses case histories to illustrate findings from hearings, national surveys, consultations, and content analyses of high school publications to investigate censorship, minority participation, and journalism education and the relationship of the established media to high school journalism.

353. NELSON, ROSEMARY O. The effects of different types of teaching methods and verbal feedback on the performance of beginning readers. *Journal of Reading Behavior*, September 1974, 6, 305-326. (V-5)

Uses reading diagnosite and achievement test results to analyze relationships among whole-word versus phonics teaching and feedback for correct versus incorrect responses during 11 weeks of instruction. Subjects included 78 bright kindergarteners.

354. NELSON, ROSEMARY O., & PEOPLES, ARTHUR. A suggested "package" to remediate reading difficulties through paraprofessionals. *Perceptual and Motor Skills*, February 1975, *40*, 42. (V-11)

Compares pre/post-treatment reading achievement of children tutored by college reading students using programed materials and a parent-involved reward system (N=7) with children tutored by women volunteers to that in an elementary school using a variety of materials and methods (N=7).

355. NEWCOMER, PHYLLIS L. Accuracy of teacher judgments. *Elementary English*, May 1975, 52, 704-707. (II)

Correlates teacher ratings of 10 to 13 of their students (student N=137) with students' standardized test performance on auditory and visual processing and IQ. Subjects were 12 fourth grade language arts teachers.

356. NEWCOMER, PHYLLIS L., & HAMMILL, DONALD D. ITPA and academic achievement: a survey. *The Reading Teacher*, May 1975, 28, 731-741. (I-14)

Discusses the concurrent and predictive validity of a psycholinguistic abilities test regarding reading, spelling, and arithmetic achievement; discussion is based on a review of 40 correlational and diagnostic studies.

357. **Northcutt, Norvell W.** Functional literacy for adults. In Duane M. Nielsen and Howard F. Hjelm (Eds.) *Reading and career education.* Perspectives in Reading No. 19, Newark, Del.: International Reading Association, 1975. Pp. 43-49. (III-7)

Describes sampling and reports selected preliminary findings from a national survey of adult literacy in occupational knowledge and consumer economics.

358. **Novic, Kenneth, & Sandman, Peter M.** How use of mass media affects views on solutions to environmental problems. *Journalism Quarterly,* Fall 1974, *51,* 448-451. (III-1)

Correlates self-reports of various media use with perception of being informed, attitude toward issues, and approach toward problems. Uses questionnaire responses from 158 university students.

359. **Oakland, Thomas, & Williams, Fern C.** An evaluation of two methods of peer tutoring. *Psychology in the Schools,* April 1975, *12,* 166-171. (V-11)

Compares the relative effects on standardized achievement test scores of peer tutoring in place of classroom instruction (N=33), supplementary oral reading with a peer (N=9), and regular classroom instruction (N=12). Tutors (N=46) and tutees were teacher-nominated third and fourth graders.

360. **O'Donnell, Roy, C., & King, F. J.** An exploration of deep structure recovery and reading comprehension skills. *Research in the Teaching of English,* Winter 1974, *8,* 327-338. (IV-9)

Investigates the relationship between learning to paraphrase sentences and reading comprehension with 50 seventh grade subjects of below average ability in reading. Their residual gain scores on deep structure tests and on cloze tests after 15 weeks of instruction were compared with those of 120 sixth through eighth graders of similar ability.

361. **Oettinger, Leon, Jr., & Majovski, Lawrence.** Research in learning disabilities. In Malcolm P. Douglass (Ed.) Reading between and beyond the lines. *Claremont Reading Conference 37th Yearbook,* 1973. Pp. 173-180. (I-6)

Summarizes findings in neurological, physiological, psychological, and chemical (drug) research related to reading difficulties.

362. **Ogletree, Earl J., & Dipasalegne, Rosalee W.** Innercity teachers evaluate DISTAR. *The Reading Teacher,* April 1975, *28,* 633-637. (V-9)

Uses a 33-item questionnaire completed by 21 primary grade teachers to determine their views of DISTAR.

363. **Ohnmacht, Fred W., & Fleming, James T.** Further effects of selected deletion strategies and varying contextual constraints on cloze performance. In Phil L. Nacke (Ed.) Interaction: research and practice for college-adult reading. *Twenty-third Yearbook of the National Reading Conference*. Pp. 163-171. (V-8)

Reports results of an experiment using a 4 × 5 factorial design with 4 levels of context a between-subjects factor and 5 types of words deleted a within-subjects factor. Subjects performing the cloze task were 40 paid students in reading instruction.

364. **Olshavsky, Jill; Andrews, Nancy; & Farr, Roger.** Convergent and discriminant validity of informal assessment of reading skills. In Phil L. Nacke (Ed.) Interaction: research and practice for college-adult reading. *Twenty-third Yearbook of the National Reading Conference*. Pp. 226-231. (II)

Uses a multitrait (3 reading subskills)-multimethod (teacher ratings) design to determine whether teachers differentiate students' reading skills by using informal measures. Three experienced teachers independently rated 25 second graders.

365. **Orwant, Jack E., & Ullmann, John.** Pentagon officers' attitudes on reporting of military news. *Journalism Quarterly*, Autumn 1974, *51*, 463-469. (III-12)

Compares the attitudes of 200 bureaucrats and 110 adult civilian males toward military news leads, the press' right to publish, and credibility of reporting such news in all media. Subjects were systematically selected from relevant telephone directories and interviewed by phone.

366. **Page, William D., & Carlson, Kenneth L.** The process of observing oral reading scores. *Reading Horizons*. Spring 1975, *15*, 147-150. (II)

Uses a tape recording of a child's reading of a 133-word passage to examine the scoring and interpretation of oral reading by 17 certified reading specialists in terms of errors and the child's reading level on that passage.

367. **Paradis, Edward, & Peterson, Joseph.** Readiness training implications from research. *The Reading Teacher*, February 1975, *28*, 445-448. (I-2)

Cites 5 studies having practical application for primary school teachers.

368. **Patterson, Harry O.** The role of communication skills in the Pre-EM Program at General Motors Institute—one year later. In Phil L. Nacke (Ed.) Programs and practices for college

reading. *Twenty-second Yearbook of the National Reading Conference*, 1973, Vol. 2. Pp. 79-85. (V-8)

Analyzes the success or failure of students in the General Motors Institute Pre-Engineering and Management Program for preparation as freshmen in a degree program.

369. **Payne, David E.** Newspapers and crime: what happens during strike periods. *Journalism Quarterly*, Winter 1974, *51*, 607-612. (III-14)

Analyzes crime statistics data from 3 cities that have prolonged newspaper strikes to note the possible relationship between newspaper publication and deviance.

370. **Pearson, P. David.** The effects of grammatical complexity on children's comprehension, recall, and conception of certain semantic relations. *Reading Research Quarterly*, 1974-1975, *10*(2), 155-192. (IV-9)

Investigates the effects of syntactic complexity on children's understanding of causal and modifying relations, their preferences among different ways of expressing the same idea, and differences between syntax read and syntax used by the children on recall. Subjects were 96 third and fourth graders reading at or above grade level.

371. **Pearson, P. David, & Kamil, Michael L.** Word recognition latencies as a function of form class, stem length, and affix length. *Visible Language*, Summer 1974, *8*, 241-246. (IV-8)

Uses a repeated measures factorial design to investigate relationships between form class (nouns or verbs), stem length, and affix length with reaction time of pronunciation as dependent variable. Subjects were 13 undergraduate psychology students.

372. **Pearson, P. David, & Studt, Alice.** Effects of word frequency and contextual richness on children's word identification abilities. *Journal of Educational Psychology*, February 1975, 67, 89-95. (IV-8)

Uses performance on a modified cloze task to analyze the relationships among grade level, word frequency, and amount of context provided. Subjects were 36 first and 36 third grade average readers.

373. **Peck, Bruce B., & Stackhouse, Thomas W.** Reading problems and family dynamics. *Journal of Learning Disabilities*, October 1973, 6, 506-511. (IV-13)

Compares 15 families identified as having a problem reader child with normal families on a conjoint decision-making task.

374. **Peltz, Fillmore K.** Using students' writing patterns to repattern reading material. In Bonnie Smith Schulwitz (Ed.) *Teachers, tangibles, techniques: comprehension in content in reading.* Newark, Del.: International Reading Association, 1975. Pp. 47-56. (IV-9)

Rewrites representative tenth grade social studies passages to conform to syntactic structures found in analysis of student writing. Uses cloze and multiple choice tests to assess comprehension of the original and rewritten texts. Subjects were 34 randomly selected tenth graders.

375. **Peltz, Fillmore Kenneth.** The effect upon comprehension of repatterning based on students' writing patterns. *Reading Research Quarterly*, 1973-1974, *9*(4), 603-621. (IV-9)

Compares 34 tenth graders' comprehension of social studies passages with their comprehension of similar passages rewritten to approximate the syntactic patterns found in an analysis of their own writing. Subjects were randomly selected from average tenth grade readers.

376. **Penrose, Jeanne; Weaver, David H.; Cole , Richard R.; & Shaw, Donald Lewis.** The newspaper nonreader 10 years later: a partial replication of Westly-Severin. *Journalism Quarterly*, Winter 1974, *51*, 631-638. (III-6)

Reports findings of a statewide survey in North Carolina identifying the attributes of newspaper non-readers. Compares findings with an earlier survey.

377. **Perelle, Ira B.** Auditory and written/visual stimuli as factors in learning and retention. *Reading Improvement*, Spring 1975, *12*, 15-22. (IV-4)

Analyzes differential recognition/recall effects on 75 second graders presented a lesson in writing or on tape. About half of each group were given a written group test, the rest an individual oral test.

378. **Peterson, Joe, & Carroll, Martha.** The cloze procedure as an indicator of the instructional level for disabled readers. In Phil L. Nacke (Ed.) Interaction: research and practice for college-adult reading. *Twenty-third Yearbook of the National Reading Conference.* Pp. 153-157. (V-12)

Compares cloze performance with standardized reading achievement of 56 sixth through ninth graders reading over 2 grades below grade placement.

379. **Pikulski, John.** A critical review: informal reading inventories. *The Reading Teacher*, November 1974, 28, 141-151. (I-9)

Discusses the concept and use of informal reading inventories, including research related to the issues raised.

380. **Poppel, Ernst, & Shattuck, Stefanie** R. Reading in patients with brain wounds involving the central visual pathways. *Cortex*, March 1974, *10*, 84-88. (VI)

Tests the hypothesis that peripheral visual information in the reading direction is essential for efficient reading by comparing reading time of 2 groups of Korean war veterans with penetrating head injury, 12 with visual field defects, and 10 without any visual field alteration.

381. **Powers, Sandra** M. The validity of the Vane Kindergarten Test in Predicting Achievement in Kindergarten and First Grade. *Educational and Psychological Measurement*, Winter 1974, *34*, 1003-1007. (V-12)

Correlates one kindergarten test administered to 148 prekindergarteners with readiness and achievement tests administered one year later.

382. **Preston, Malcolm** S.; **Guthrie, John** T.; & **Childs, Barton.** Visual evoked responses (VERs) in normal and disabled readers. *Psychophysiology*, July 1974, *11*, 452-457. (IV-13)

Compares VERs to tachistoscopically presented words and light flashes of 9 disabled readers with those of 9 normal readers matched on age and IQ and 9 normal readers matched on reading level and IQ.

383. **Pumfrey,** P. D. Promoting more sophisticated use of reading tests: a national survey. *Reading (UKRA)*, March 1974, *8*, 5-13. (II)

Reports on in-service teacher training in uses of reading tests based on a survey of 164 educational psychologists. Of these, 159 returned the questionnaires.

384. **Pyrczak, Fred.** Passage-dependence of items designed to measure the ability to identify the main ideas of paragraphs: implications for validity. *Educational and Psychological Measurement*, Summer 1974, *34*, 343-348. (V-12)

Tests the hypothesis that, in a standardized reading test, subjects can answer a larger than chance number of items correctly without reading the passage on which questions were based. Subjects were 71 black, innercity high school students, including some "nonreaders," and 55 graduate students.

385. **Pyrczak, Fred.** Passage-dependence of reading comprehension questions: examples. *Journal of Reading*, January 1975, *18*, 308-311. (V-12)

Discusses implications of results from 47 college students given 12 multiple choice questions without the associated passages. Questions were written by tests and measurements students.

386. PYRCZAK, FRED, & RASMUSSEN, MARILYN. Skills measured by selected reading tests designed for high school use. *Reading Improvement*, Winter 1974, *11*, 5-8. (V-12)

Classified 510 multiple choice items found in 9 standardized reading tests according to Davis' model of reading comprehension.

387. QUARLES, ROYCE W. Teacher incentive through performance contracting: a programmatic approach. *Reading Improvement*, Fall 1974, *11*, 10-12. (V-9)

Describes a program combining diagnostic-based instruction and a monetary reward system designed to boost reading achievement and attitudes toward reading among 420 grades 1-8 pupils.

388. QUIGLEY, HELEN. The pre-reading vocabulary of children leaving nursery school. *Educational Research*, November 1973, *16*, 28-33. (IV-8)

Tests children's listening comprehension of words contained in the most frequently used British reading schemes. Subjects were 50 mostly working class children, ages 4-9 to 5-2.

389. QUIGLEY, S. P.; SMITH, N. L.; & WILBUR, R. B. Comprehension of relativized sentences by deaf students. *Journal of Speech and Hearing Research*, September 1974, *17*, 325-341. (VI)

Studies acquisition of particular syntactic structures in prelingually and profoundly deaf students, ages 10-18 (N=428), and 60 hearing students, using a paper and pencil test.

390. QUIRK, THOMAS J.; TRISMEN, DONALD A.; NALIN, KATHERINE B.; & WEINBERG, SUSAN F. The classroom behavior of teachers during compensatory reading instruction. *The Journal of Educational Research*, January 1975, 68, 185-192. (II)

Describes activities of 135 second, fourth, and sixth grade teachers observed during 9 unannounced visits by 45 trained observers.

391. RAKES, THOMAS A.; LINTZ, ELIZABETH; & PAYTON, LUCRETIA. An evaluation of the reading achievement of disadvantaged freshmen enrolled in competency-based and traditional college reading improvement classes. In Phil L. Nacke (Ed.) Interaction: research and practice for college-adult reading. *Twenty-third Yearbook of the National Reading Conference*. Pp. 280-284. (V-8)

Compares attitudes and pretest/post test reading achievement of students in 2 competency-based and 2 traditional college reading courses. Subjects were 61 high-risk economically deprived, predominantly black, work-study students.

392. **Ramanauskas, Sigita, & Kahn, Harris.** The experimental validation of a graded word list by EMR children. *Mental Retardation*, April 1975, *13*, 27-31. (V-9)

Uses oral reading of 492 basic sight words to validate readability and to develop a core of readable words to control reading vocabulary within arithmetic instructional materials. Subjects were 137 intermediate, junior, and senior high school students.

393. **Rankin, Earl F.** The cloze procedure revisited. In Phil L. Nacke (Ed.) Interaction: research and practice for college-adult reading. *Twenty-third Yearbook of the National Reading Conference*. Pp. 1-8. (I-7)

Discusses the cloze test as a basic technique in a brief review of research findings and trends. Points out limitations and recommends many applications of this tool.

394. **Ray, Michael L.** (In collaboration with Alan G. Sawyer, Michael L. Rothschild, Roger M. Heeler, Edward C. Strong, and Jerome B. Reed.) Marketing communication and the hierarchy-of-effects. In Peter Clarke (Ed.) *New models for mass communication research. Sage annual reviews of communication research, Vol. II.* Beverly Hills: Sage Publications, 1973. Pp. 147-176. (I-10)

Reports on a series of experimental studies designed to test a cognitive-affective-conative model of response to advertising.

395. **Raygor, Alton L.; Browning, William G.; Kagan, Corin E.; Miller, Phyllis; & Schmelzer, Ronald.** 1973 review of research in college-adult reading. In Phil L. Nacke (Ed.) Interaction: research and practice for college-adult reading. *Twenty-third Yearbook of the National Reading Conference.* Pp. 23-88. (I-1)

Summarizes 349 articles appearing in 59 journals, including *Dissertation Abstracts and Psychological Abstracts*, between September, 1972, and July, 1973.

396. **Rayner, Keith, & Kaiser, Jacqueline S.** Reading mutilated text. *Journal of Educational Psychology*, April 1975, 67, 301-306. (IV-6)

Compares reading time of passages in which shapes of initial, medial, or final letter of words and/or whole word shapes were changed. Subjects were 12 good and 12 poor readers from sixth grade to high school level.

397. **REUSS, CAROL.** Better Homes and Gardens: consistent concern key to long life. *Journalism Quarterly*, Summer 1974, *51*, 292-296. (III-8)

Describes the editorial policy of one magazine from its founding in 1922 and its translation into content of articles, features, and advertising up to the present.

398. **RICHARDSON, DONALD C., & HAVLICEK, LARRY L.** High-school students as reading instructors. *The Elementary School Journal*, March 1975, *75*, 389-393. (V-11)

Compares pretest/post test reading achievement of 84 precision taught and 131 control subjects in second through sixth grade. Their achievement on entry was at least one grade below placement. Most of the pupils and the 49 teenage tutors were black and Chicano.

399. **RICHARDSON, ELLIS; OESTEREICHER, MARY H.; BIALER, IRV; & WINSBERG, BERTRAND G.** Teaching beginning reading skills to retarded children in community classrooms: a programmatic case study. *Mental Retardation*. February 1975, *13*, 11-15. (VI)

Assesses the effects of an experimental phonics program used with 19 mentally retarded children (mean IQ, 66; mean age, 10) in terms of a criterion referenced test of phonic skills.

400. **RICHSTAD, JIM, & MCMILLAN, MICHAEL.** The Pacific islands press. *Journalism Quarterly*, Autumn 1974, *51*, 470-477. (III-11)

Describes characteristics of the Pacific press (63 publications), government-press relations, news content, and problems they face.

401. **RICKARDS, JOHN P., & DIVESTA, FRANCIS J.** Type and frequency of questions in processing textual material. *Journal of Educational Psychology*, June 1974, *66*, 354-362. (IV-5)

Analyzes effect on retention of different levels of questions inserted after every 2 or every 4 paragraphs in a reading passage. Subjects were 80 college sophomores.

402. **ROBERTS, TESSA.** Skills of analysis and synthesis in the early stages of reading. *British Journal of Educational Psychology*, February 1975, *45*, 3-9. (IV-8)

Uses a Latin Square design to assess the performance of 40 five and six year olds on 4 tasks of analyzing or blending words involving 4 lists of equal difficulty. Words were presented orally or both orally and visually.

403. **ROBERTSON, DOUGLAS J., & TREPPER, TERRY STEVEN.** The effects of i.t.a. on the reading achievement of Mexican-American children. *Reading World*, December 1974, 132-138. (V-5)

Compares reading achievement of bilingual fourth graders who had been randomly assigned to initial reading instruction in either i.t.a. or T.O. Twenty-six children from each group were randomly selected for testing.

404. **Robinson, Gertrude Joch.** Mass media and ethnic strife in multi-national Yugoslavia. *Journalism Quarterly*, Autumn 1974, *51*, 490-497. (III-1)

Tests opposing hypotheses of an ameliorating versus aggravating role in ethnic conflict played by mass media. Integrates an index of programing content with previous findings in attitude and exposure studies.

405. **Robinson, Helen M.** Insights from research: children's behavior while reading. In William D. Page (Ed.) *Help for the reading teacher: new directions in research.* National Conference on Research in English, ERIC Clearinghouse on Reading and Communication Skills, National Institute of Education. Pp. 9-22. (I-14)

Summarizes findings in a variety of studies on testing procedures, eye movements, introspective-retrospective reports, systematic observations of children's reading, and teaching retarded readers. Suggests further research on the reading process.

406. **Robinson, John P.** Mass communication and information diffusion. In F. G. Kline & P. J. Tichenor (Eds.) *Current perspectives in mass communication research. Sage annual reviews of communication research, Vol. I.* Beverly Hills: Sage Publications, 1972. Pp. 71-93. (I-10)

Reviews studies on the effectiveness of the media in conveying news information and discusses processes of information flow.

407. **Robinson, John P.** The press as king-maker: what surveys from last five campaigns show. *Journalism Quarterly*, Winter 1974, *51*, 587-594, 606. (III-14)

Analyzes national survey data to estimate the effect of newspaper endorsement of presidential candidates on voter behavior.

408. **Robinson, Richard D.** Literacy instruction—an opinion survey of persons in adult education. *Adult Leadership*, December 1974, *23*, 167-169. (III-7)

Examines the training, classroom experience, and attitudes of 65 males and 18 females with recent doctorates in adult reading regarding adult literacy training. The questionnaire return rate was 70 per cent.

409. **RODE, SARA S.** Development of phrase and clause boundary reading in children. *Reading Research Quarterly*, 1974-1975, *10*(*1*), 124-142. (IV-8)
Investigates the influence of syntactic structure on eye-voice span, using a scan box oral reading task. Subjects were 18 average readers from each of third, fourth, and fifth grades (N=54).

410. **RODENBORN, LEO V., & WASHBURN, EARLENE.** Some implications of the new basal readers. *Elementary English*, September 1974, *51*, 885-888. (V-9)
Compares vocabulary load and commonality of vocabulary in several editions of widely used series.

411. **ROGERS, MARGARET ANNE.** A different look at word problems. *Mathematics Teacher*, April 1975, *68*, 285-288. (III-2)
Examines sexism in high school mathematics textbooks by categorizing verbal problems in 8 books according to representations of males and females.

412. **ROSENFIELD, ABBY G.** Psycholinguistic variables in the prediction of reading ability. *The Journal of Genetic Psychology*, June 1975, *126*, 309-310. (V-12)
Compares prediction of 30 first graders' reading achievement from a psycholinguistic abilities test and a traditional intelligence test. Predictor-criterion interval was 5 months.

413. **ROSENTHAL, DANIEL J. A., & RESNICK, LAUREN B.** Children's solution processes in arithmetic word problems. *Journal of Educational Psychology*, December 1974, *66*, 817-825. (IV-8)
Investigates mathematical and linguistic factors in solving story problems read by 63 white third graders from working class families. Varies order of mention of problem components, position of the unknown set, and gain or loss verb.

414. **ROTHKOPF, ERNST Z., & COATNEY, RICHARD P.** Effects of readability of context passages on subsequent inspection rates. *Journal of Applied Psychology*, December 1974, *59*, 679-682. (IV-17)
Studies the effect of passage readability on the inspection rate of remaining paragraphs. A total of 92 college students served as subjects.

415. **ROUDABUSH, GLEN E.** An empirical structure for reading objectives. *Journal of Reading Behavior*, December 1974, *6*, 403-419. (V-12)
Applies an empirical way to determine contingencies among reading objectives to the 90 objectives underlying 4 forms of a crite-

rion referenced reading test. About 14,000 first through third graders were survey tested.

416. **Rozin, Paul; Bressman, Beth; & Taft, Mark.** Do children understand the basic relationship between speech and writing? The Mow-motorcycle Test. *Journal of Reading Beavior*, September 1974, 6, 327-334. (IV-8)

Reports children's ability to identify which of a pair of long and short words and pseudo words had been pronounced by the examiner. Testees included 183 innercity children in kindergarten to second grade and 35 suburban kindergarteners.

417. **Rubeck, Patricia A.** Hawthorne concept—does it affect reading progress? *The Reading Teacher*, January 1975, 28, 375-379.

Presents findings of an investigation measuring change in reading test performance as a result of the Hawthorne effect. Includes 24 classrooms in grades 3 through 8.

418. **Rubin, Dorothy.** Inner-city high school teachers as teachers of reading: a possible solution to the dropout problem. *The Journal of Negro Education*, Summer 1974, 43, 337-347. (II)

Compares pre- and post-treatment reading skills test results of 5 male and 14 female staff members in a high school. The subjects volunteered for an in-service course. Assesses their opinions about reading and high school dropouts.

419. **Rubin, Rosalyn A.** Preschool application of the Metropolitan Readiness Tests: validity, reliability, and preschool norms. *Educational and Psychological Measurement*, Summer 1974, 34, 417-422. (V-12)

Provides entering kindergarten norms, one-year test-retest reliabilities, and predictive validity coefficients on readiness tests and first grade reading, spelling, and arithmetic achievement. Subjects were 428 boys and 482 girls, who were 96.5 per cent white, with normally distributed IQ's.

420. **Rubin, Rosalyn A.** Reading ability and assigned materials: accommodation for the slow but not the accelerated. *The Elementary School Journal*, March 1975, 75, 373-377. (V-10)

Compares the level of assigned reading in textbooks with the measured reading achievement of 1,426 children in first through fifth grades.

421. **Rude, Robert T.; Niquette, Sheldon; & Foxgrover, Phyllis.** The retention of visual and auditory discrimination read-

ing skills. *The Journal of Educational Research*, January 1975, *68*, 192-196. (IV-6)

Reports results of standardized prereading tests administered to 119 kindergarteners in May and again in September.

422. **Rudie, Helen N.** Poetry in basal readers: perished or cherished? *Elementary English*, January 1975, *52*, 136-140. (V-9)

Examines 11 second grade basals for quantity and quality of poetry and teaching guidelines.

423. **Rugel, Robert.** The factor structure of the WISC in two populations of disabled readers. *Journal of Learning Disabilities*, November 1974, *7*, 581-585. (IV-3)

Discusses differences in WISC subtest loadings on 3 factors among 3 populations, including 2 samples of retarded readers (N=240 and N=71) and Wechsler's standardization sample of 10½ year olds.

424. **Rumelhart, David E., & Siple, Patricia.** Process of recognizing tachistoscopically presented words. *Psychological Review*, March 1974, *81*, 99-118. (IV-5)

Tests a model of word recognition encompassing both sophisticated guessing and criterion bias models in an experiment determining exact recognition probabilities of 726 three-letter strings. Subjects were 5 paid undergraduates.

425. **Rutter, Michael; Yule, Bridget; Quinton, David; Rowlands, Olwen; Yule, William; & Berger, Michael.** Attainment and adjustment in two geographical areas: III—Some factors accounting for area differences. *British Journal of Psychiatry*, June 1974, *125*, 520-533. (IV-13)

Analyzes parental interviews and questionnaires to discover reasons for the large differences between London and the Isle of Wight in rates of psychiatric disorders and specific reading retardation found in an epidemiological study of 10-year-old school children.

426. **Sabatino, David A., & Dorfman, Nancy.** Matching learner aptitude to two commercial reading programs. *Exceptional Children*, October 1974, *41*, 85-90. (VI)

Uses an aptitude by treatment design with 77 educable, mentally retarded children grouped according to modality strength to assess the effectiveness of 12 weeks of programed instruction in reading emphasizing either visual or auditory skills.

427. **Samph, Thomas.** Teacher behavior and the reading performance of below-average achievers. *The Journal of Educational Research*, February 1974, 67, 268-270. (II)

Ascertains the influence of teacher verbal behavior on the language skill development of 155 below average achievers.

428. **Samph, Thomas, & Campbell, Patricia.** Open education: students in transition. *The Elementary School Journal,* October 1974, *75,* 37-41. (V-10)

Studies seventh graders to compare attitudes and academic achievement of 170 students from traditional schools with 57 students from an open education school. Includes another 10 students who had applied for admission to but not attended the latter school.

429. **Samuels, S. Jay, & Dahl, Patricia R.** Establishing appropriate purpose for reading and its effect on flexibility of reading rate. *Journal of Educational Psychology,* February 1975, *67,* 38-43. (IV-5)

Reports experiments with 100 fourth graders and 84 college students testing for intra-individual differences in reading rate when stated purpose is varied.

430. **Sasanuma, Sumiko.** Kanji versus kana processing in alexia with transient agraphia: a case report. *Cortex,* March 1974, *10,* 89-97. (VI)

Reports behaviorally different decoding strategies using phonic versus non-phonic based orthography observed in a 43-year-old, post-stroke Japanese patient, who was formerly a high school teacher.

431. **Sassenrath, J. M.; & Maddux, Robert E.** A follow-up of disadvantaged kindergarten children in second grade reading. *Psychology in the Schools,* January 1975, *12,* 71-73. (IV-7)

Compares second grade reading achievement of disadvantaged monolingual and bilingual boys and girls (N=40) with each other and with district-wide achievement. The group studied had participated in intensive language development programs in kindergarten.

432. **Satz, Paul, & Friel, Janette.** Some predictive antecedents of specific reading disability: a preliminary two-year follow-up. *Journal of Learning Disabilities,* July/August 1974, *7,* 437-444. (IV-12)

Tests a developmental model of dyslexia through discriminate function analysis of a test battery administered in kindergarten and at the end of first grade reading level. Subjects were 473 white males from 14 urban and 6 rural schools.

433. **Schill, Thomas; Evans, Ron; Monroe, Scott; & Drain, Dennis.** Effects of approval or disapproval on reading behavior of high- and low-guilt subjects. *Journal of Consulting and Clinical Psychology,* February 1975, *43,* 104. (IV-12)

Uses time spent viewing an erotic magazine to assess the relationship between a prior evaluative comment and measured sex guilt in 48 subjects.

434. **Schlief, Mabel, & Wood, Robert W.** A comparison of procedures to determine readability level of non-text materials. *Reading Improvement*, Fall 1974, *11*, 57-64. (IV-17)

Correlates 9 readability formulas, cloze procedures, and the performance of 76 fourth through eighth graders on cloze tests based on non-text materials in order to determine a practical means for assessing readability of selected trade materials.

435. **Schneeberg, Helen E., & Mattleman, Marciene S.** The listen-read project: motivating students through dual modalities. *Elementary English*, September 1973, *50*, 900-904. (V-5)

Presents a study using 2 second grade and 2 third grade innercity classes to show the improvement of reading of these children through coordinated program of books and tapes with listening centers.

436. **Schnell, Thomas R.** The community college reading teacher: a profile. *Journal of Reading*, October 1974, *18*, 8-11. (II).

Describes the modal college reading teacher based on questionnaires from a random sample of 47 members of IRA Special Interest Group for Two Year Colleges.

437. **Schnell, Thomas R., & Sweeney, Judith.** Sex role bias in basal readers. *Elementary English*, May 1975, *52*, 737-742. (III-2)

Examines the most recent edition of one basal reading series and compares it with the previous edition on treatment of roles, activities, and relative importance of male and female characters.

438. **Schofield, R. S.** The measurement of literacy in pre-industrial England. In Jack Goody (Ed.) *Literacy in traditional society*. Cambridge, England: The University Press, 1968. Pp. 311-325. (III-7)

Comments on the nature of literacy in pre-industrial England and discusses the problem of measuring it.

439. **Schram, Barbara A.** D is for dictionary S is for stereotyping. *Interracial Books for Children*, 1974, *5*(6), 1, 2, 6. (III-2)

Assesses sex role stereotyping in 8 children's dictionaries by selectively sampling definitions, examples of word use, and illustrations.

440. **Schwarzlose, Richard A.** Early telegraphic news dispatches: forerunner of the AP. *Journalism Quarterly*, Winter 1974, *51*, 595-601. (III-8)

Compares telegraphic news dispatches appearing in selected New York newspapers during the period of early telegraphic growth (early 1800's) to investigate the origins of communal news gathering.

441. **Sciara, Frank J., & Jantz, Richard K.** Father absence and its apparent effect on the reading achievement of black children from low income families. *The Journal of Negro Education*, Spring 1974, *43*, 221-227. (IV-15)

Compares standardized reading achievement of 300 children from father-absent homes to that of 773 children from father-present homes. Subjects were urban black fourth graders grouped by sex, IQ, and socioeconomic status.

442. **Scott, Ralph.** Shifts in reading readiness profiles during the past decade. *The Journal of Genetic Psychology*, June 1975, *126*, 269-273. (V-4)

Compares the reading readiness profiles of 124 lowerclass and 108 middleclass first graders with the norms obtained 10 years earlier.

443. **Scott, Ralph, & Seifert, Keith.** Family size and learning readiness profiles of socioeconomically disadvantaged preschool whites. *The Journal of Psychology*, January 1975, *89*, 3-7. (IV-15)

Compares readiness measures on 50 matched pairs of 2- and 3-year-old lower socioeconomic level children representative of large and small families.

444. **Scotton, James F.** Kenya's maligned African press: time for a reassessment. *Journalism Quarterly*, Spring 1975, *52*, 30-36 (III-11)

Analyzes content of newspapers preserved in the Kenyan archives to investigate charges of irresponsibility, subversion, and sedition during 1945 to 1952.

445. **Seiderman, Arthur S.** An investigation of the perceptual and perceptual motor implications of the WISC. *Journal of Optometric Vision Therapy*, March 1974, *5*, 6-15. (IV-3)

Reviews literature related to the study of perceptual and perceptual motor implications of the WISC and its relation to slow learners and retarded readers. Presents findings from 10 case studies on WISC subtest results.

446. **Sewell, Trevor E., & Severson, Roger A.** Intelligence and achievement in first-grade black children. *Journal of Consulting and Clinical Psychology*, February 1975, *43*, 112. (IV-3)

Attempts to determine the predictive validity of IQ for standardized achievement in word reading and arithmetic. A random sample of 84 black children, ages 5-10 to 7-5, was tested.

447. **SEYMOUR-URE, COLIN.** *The political impact of mass media.* Beverly Hills, Cal.: Sage, 1974. (I-10)

Synthesizes much previous research and presents an analytical framework and several illustrative case studies drawn mainly from Britain and the United States in an attempt to broaden the scope of inquiry into the political effects of mass media.

448. **SHELDON, WILLIAM D.; LASHINGER, DONALD R.; TROIKE, DOROTHY R.; & SHAPIRO, JON E.** A summary of research studies relating to language arts in elementary education: 1973. *Elementary English,* November/December 1974, *51,* 1177-1199. (I-1)

Summariz[illegible] other summaries and reviews and briefly surveys recent research reports in several areas of reading and language arts.

449. **SHEPHERD, JAMES F.** Research on the relationship between the meanings of morphemes and the meanings of derivatives. In Phil L. Nacke (Ed.) Interaction: research and practice for college-adult reading. *Twenty-third Yearbook of the National Reading Conference.* Pp. 115-119. (I-11)

Summarizes and analyzes 20 publications on morpheme frequency, English morphology, and related studies in educational psychology.

450. **SHIPMAN, VIRGINIA C.** Disadvantaged children and their first school experiences, ETS-Head Start longitudinal study. In Julian C. Stanley (Ed.) *Compensatory education for children, ages 2 to 8.* Baltimore: The Johns Hopkins University Press, 1973. Pp. 145-195. (V-4)

Discusses implications of preliminary demographic and psychometric data on over 1,800 children, ages 3-9 to 4-8, who were eligible for Head Start.

451. **SHIRLEY, FEHL L.** When does reading make a difference? In Malcolm P. Douglass (Ed.) Reading between and beyond the lines. *Claremont Reading Conference 37th Yearbook,* 1973. Pp. 93-102. (I-14)

Discusses previous research findings on personal involvement in reading based on questionnaire and case studies of 420 adolescents.

452. **SIDMAN, MURRAY, & WILLSON-MORRIS, MARTHA.** Testing for reading comprehension: a brief report on stimulus control. *Journal of Applied Behavior Analysis,* Summer 1974, *7,* 327-332. (V-12)

Reports multiple choice test results from 14 normal adults administered a widely used aphasia test without the associated reading passages.

453. **Siegel, Arthur I.; Lautman, Martin R.; & Burkett, James R.** Reading grade level adjustment and auditory supplementation as techniques for increasing textual comprehensibility. *Journal of Educational Psychology*, December 1974, 66, 895-902. (V-8)

Reports 3 experiments investigating situations in which lowering the readability level of texts or providing supplementary tape recordings of the material would maximize comprehension. Subjects included 114 Air Force trainees.

454. **Silberberg, Norman E.; Iversen, Iver A.; & Goins, Jean T.** Which remedial reading method works best? *Journal of Learning Disabilities*, November 1973, 6, 547-556. (V-11)

Analyzes reading achievement of 134 third graders who had experienced remedial work in reading in a followup study in order to determine the effects of remedial instruction.

455. **Silver, Larry B.** Acceptable and controversial approaches to treating the child with learning disabilities. *Pediatrics*, March 1975, 55, 406-415. (I-6)

Summarizes the literature on classification and treatment of learning disabled children to assist family physicians working with such children.

456. **Silverston, Randall A., & Deichmann, John W.** Sense modality research and the acquisition of reading skills. *Review of Educational Research*, Winter 1974, 45, 149-172. (I-14)

Reviews and integrates findings in studies of sensory dynamics. Discusses models of the reading process and their relationship to learning theories in an attempt to facilitate explanation of the empirical literature.

457. **Simon, William E., & Simon, Marilyn G.** Self-esteem, intelligence and standardized academic achievement. *Psychology in the Schools*, January 1975, 12, 97-100. (IV-14)

Reports correlations by sex between a measure of self-esteem, IQ, and subtests on a standardized test of academic achievement. Subjects were 45 male and 42 female fifth graders.

458. **Simons, Herbert D.** Black dialect phonology and word recognition. *The Journal of Educational Research*, October 1974, 68, 67-70. (IV-10)

Examines oral reading of black dialect homophone pairs to test the assumption that the closer the pronunciation/spelling match, the easier the reading task. Subjects were 76 second through fourth graders in an all black Title I school.

459. **SIMONS, HERBERT D., & JOHNSON, KENNETH R.** Black English syntax and reading interference. *Research in the Teaching of English*, Winter 1974, *8*, 339-358. (IV-7)

Compares oral reading of dialect to standard versions of the same texts by 67 second and third grade black dialect speaking children.

460. **SINGER, HARRY; SAMUELS, S. JAY; & SPIROFF, JEAN.** The effect of pictures and contextual conditions on learning responses to printed words. *Reading Research Quarterly*, 1973-1974, *9(4)*, 555-567. (IV-8)

Uses an artificial alphabet in a study of word learning designed to compare Samuels' focal attention theory with Goodman's facilitating context. Subjects included 80 first graders and 84 second graders.

461. **SISSORS, JACK Z.** Do youthful, college-educated readers prefer contemporary newspaper designs? *Journalism Quarterly*, Summer 1974, *51*, 307-313. (III-3)

Uses a paired comparison technique to obtain choice rankings of 4 front page newspapers formats ranging from traditional to ultramodern. The 44 interviewees, ages 18-34, included 39 with some college education.

462. **SLOAN, LOUISE L.; HABEL, ADELAIDE; & FEIOCK, KATHARINE.** High illumination as an auxillary reading aid in diseases of the macula. *American Journal of Ophthalmology*, November 1973, *76*, 745-757. (VI)

Describes a simple clinical test to determine whether high illumination produces an improvement in the reading vision of patients with a macular lesion. Subjects ranged in age from 30 to 88 years old.

463. **SMITH, DAVID M.** Mass media as a basis for interaction: an empirical study. *Journalism Quarterly*, Spring 1975, *52*, 44-49, 105. (III-1)

Investigates the relationship between IQ and use of mass media as a basis for conversation with friends. An area sample of 541 school children were interviewed. They completed questionnaires at ages 11-12, 13-14, and again at 15-16.

464. **SMITH, DOROTHY E., & PERVANGER, JANET.** Reading, a major factor in determining success in nursing education. *Reading Horizons*, Spring 1974, *14*, 125-129. (IV-12)

Compares results of selection instruments, including a projective test and a group intelligence test given to 1,986 passing and failing nursing school entrants grouped by graduating/not graduating.

465. **Smith, Lewis B., & Morgan, Glen D.** Cassette tape recording as a primary method in the development of early reading material. *Elementary English*, April 1975, 52, 534-538. (V-5)

Discusses findings from several studies comparing reading achievement of first and second graders who had and had not been in an experimental learning experience program complementing basal readers.

466. **Smith, Nila Banton.** Early language development: foundation of reading. *Elementary English*, March 1975, 52, 399-402, 418. (I-2)

Synthesizes research on language acquisition and interrelations of language and reading.

467. **Smith, Nila Banton.** Some basic factors in reading difficulties of the disadvantaged. *Reading Improvement*, Fall 1974, *11*, 3-9. (I-14)

Reviews research concerned with self concept, home environment, and health factors as they relate to the reading achievement of disadvantaged children.

468. **Smith, Terry, & Levin, Jack.** Social change in sex roles: an analysis of advice columns. *Journalism Quarterly*, Autumn 1974, *51*, 525-527. (III-2)

Examines changes in sex role conceptions depicted in lovelorn advice columns by comparing content analyses of Boston newspaper samples during 1947-1951 and 1967-1971.

469. **Smith, William L.** Syntactic recording of passages written at 3 levels of complexity. *The Journal of Experimental Education*, Winter 1974, *43*, 66-72. (IV-7)

Hypothesizes that subjects will recode input at their own level of syntactic complexity. Subjects were 113 eighth and 90 ninth graders asked to rewrite a more or less randomly assigned passage written in kernel sentences, at eighth grade or skilled adult levels.

470. **Snider, Sarah J.** Cognitive and affective learning outcomes resulting from the use of behavioral objectives in teaching poetry. *The Journal of Educational Research*, May/June 1975, *68*, 333-338. (V-7)

Analyzes pretest and post test results on poetry to assess the effectiveness of behavioral objectives on both cognitive and affective learning dimensions. Subjects were ninth graders in 4 heterogeneously grouped classes taught by the same teacher.

471. **Snowman, Jack, & Cunningham, Donald J.** A comparison of pictorial and written adjunct aids in learning from text. *Journal of Educational Psychology*, April 1975, 67, 307-311. (IV-5)

Varies presence and position of complementary questions and picture drawing instructions to study the effects on learning a 2,189-word passage. Subjects were 63 introductory educational psychology students.

472. **Somervill, Mary Ann.** Dialect and reading: a review of alternative solutions. *Review of Educational Research*, Spring 1975, 45, 247-262. (I-11)

Reviews research on reading instruction programs that take dialect differences into account.

473. **Spencer, Herbert; Reynolds, Linda; & Coe, Brian.** Spatial and typographic coding with bibliographical entries. *Journal of Applied Programmed Learning and Educational Technology*, March 1975, *12*, 95-101. (IV-17)

Uses a Latin Square design to investigate retrieval accuracy of 36 post-graduate library students searching bibliographies for author or title under speeded conditions. Lists were printed in 3 different type and 6 different line entry styles.

474. **Spooncer, Frank.** Hanging out the 'cloze' line. *Reading (UKRA)*, June 1974, *8*, 19-26. (IV-17)

Compares score distributions on cloze tests and standardized reading achievement tests from 134 British fourth year junior students.

475. **Spring, Carl, & Capps, Carolyn.** Encoding speed, rehearsal, and probed recall of dyslexic boys. *Journal of Educational Psychology*, October 1974, *66*, 780-786. (IV-13)

Tests a 2-storage memory model by comparing 24 good to 24 poor readers with average IQ's on speed in 3 naming tasks and eye movements during a "concentration" type of memory task. Subjects were ages 7-13.

476. **Stamm, Keith R.** Environment and communication. In F. G. Kline & P. J. Tichenor (Eds.) *Current perspectives in mass communication research. Sage annual reviews of communication research, Vol. I.* Beverly Hills: Sage Publications, 1972. Pp. 265-294. (I-10)

Presents a review of research on attitude and behavior change bearing on the role communication and the mass media might play in environmental issues.

477. **Stanchfield**, Jo. Sex factors in learning to read. *Illinois Reading Council Journal*, March 1975, 3, 10-13. (I-3)

Discusses 8 differences in the ways that boys and girls learn to read based on previous research.

478. **Starck, Kenneth**. Producer/consumer perceptions of the function of the daily newspaper. *Journalism Quarterly*, Winter 1974, *51*, 670-676. (III-12)

Explores differences of opinion relative to the function of the press as perceived by newspaper personnel and by readers. Uses 39 subjects.

479. **Stauffer, Russell G.**, & **Pikulski, John J.** A comparison and measure of oral language growth. *Elementary English*, November/December 1974, *51*, 1151-1155. (V-5)

Analyzes a sample of dictations over the school year from 50 grade 1 children who were being taught to read using a language experience approach.

480. **Stern**, J. A.; **Bremer**, D. A.; & **McClure**, J. Analysis of eye movements and blinks during reading: effects of valium. *Psychopharmacologia*, 1974, *40*, 171-175. (IV-1)

Uses subjective reports and computer analyzed electro oculograms in a double blind, before-after study evaluating sedative effects of valium on reading. Subjects were 17 paid male college students whose visual search activity was monitored during reading.

481. **Sticht, Thomas G.**, & **McFann, Howard H.** Reading requirements for career entry. In Duane M. Nielsen and Howard F. Hjelm (Eds.) *Reading and career education.* Perspectives in Reading No. 19. Newark, Del.: International Reading Association, 1975. Pp. 62-76. (V-8)

Critiques methods of determining vocational reading requirements. Presents some data identifying requirements and relates reading ability to reading requirements on jobs.

482. **Stone, Vernon A.**, & **Hoyt, James L.** Effect of likability and relevance of expertness. *Journalism Quarterly*, Summer 1974, *51*, 314-317. (III-16)

Varies descriptions of the putative author of a persuasive message read by 70 mass communications students and then analyzes the effects on the subjects' rating of likability, relevance, and credibility of the author.

483. **Stotsky, Sandra L.** Sentence-combining as a curricular activity: its effect on written language development and reading

comprehension. *Research in the Teaching of English*, Spring 1975, *9*, 30-71. (I-11)

Traces the interrelationship of reading, writing, and language development in an attempt to show how theory influences research and research aids in the development of theory.

484. STRATTON, R. PAUL, & NACKE, PHIL L. The role of vocabulary knowledge in comprehension. In Phil L. Nacke (Ed.) Interaction: research and practice for college-adult reading. *Twenty-third Yearbook of the National Reading Conference*. Pp. 185-192. (I-11)

Summarizes some of the research regarding the relationship of vocabulary knowledge to comprehension and discusses it within levels of processing framework.

485. SURLIN, STUART H., & WALKER, BARRY. Employee evaluations of handling of news by a corporate newspaper. *Journalism Quarterly*, Spring 1975, 52, 99-105. (III-12)

Assesses attitudes toward coverage and credibility of a company paper in a questionnaire survey of a stratified random sample of all employees. Response rate was 26 per cent (N = 188).

486. SWALM, JAMES E. Is listening really more effective for learning in the early grades? *Elementary English*, November/December 1974, *51*, 1110-1113. (V-5)

Compares listening to reading comprehension in a study of the relationship between reading ability and readability. Subjects were 72 students in each grade tested: 2, 3, and 4.

487. SWENSON, INGRID, & KULHAVY, RAYMOND W. Adjunct questions and the comprehension of prose by children. *Journal of Educational Psychology*, April 1974, 66, 212-215. (IV-5)

Analyzes the effect of questions in pre- and post-positions on the immediate and delayed retention and the relevant-incidental learning of 109 fifth and sixth graders; also examines optional pacing of adjunct questions.

488. TAMBIAH, S. G. Literacy in a Buddhist village in north-east Thailand. In Jack Goody (Ed.) *Literacy in traditional society*. Cambridge, England: The University Press, 1968. Pp. 86-131. (III-7)

Considers the use of and discusses the role of literacy in a Buddhist village.

489. TANKARD, JAMES W., JR., & RYAN, MICHAEL. News source perceptions of accuracy of science coverage. *Journalism Quarterly*, Summer 1974, *51*, 219-225, 334. (III-12)

Assesses type and frequency of errors in science articles, and attitudes toward and influences on science reporting. Of 242 scientists sent questionnaires and articles covering their investigations, 193 responded.

490. **Tarver, Sara G., & Hallahan, Daniel P.** Attention deficits in children with learning disabilities: a review. *Journal of Learning Disabilities*, November 1974, 7, 560-569. (I-6)

Reviews 21 experimental studies of characteristics attributed to learning disabled children, including distractibility, hyperactivity, impulsivity, etc., and 4 investigations using standardized tests.

491. **Tatum, B. Charles, & Friden, Thomas P.** Verbal and imaginal coding of words and pictures. *Perceptual and Motor Skills*, August 1974, *39*, 551-561. (IV-5)

Correlates reaction time of same/different judgments of word and picture pairs with syllable length of the verbal representation of the stimuli to test a dual-coding hypothesis. Sixteen undergraduates served in each experiment.

492. **Taylor, Marjorie E.** Sex-role stereotypes in children's readers. *Elementary English*, October 1973, *50*, 1045-1047. (V-9)

Discusses a study of one of California's state-adopted elementary reading textbook series with relation to the domestic roles and behaviors that are portrayed in these texts.

493. **Telegdy, Gabriel A.** The effectiveness of four readiness tests as predictors of first grade academic achievement. *Psychology in the Schools*, January 1975, *12*, 4-11. (V-12)

Uses a combination of multiple correlations and stepwise multiple regression to predict first grade achievement measured by standardized tests of reading and arithmetic from a kindergarten readiness test battery administered to 56 subjects, including disadvantaged and advantaged children.

494. **Telegdy, Gabriel A.** A factor analysis of four school readiness tests. *Psychology in the Schools*, April 1974, *11*, 127-133. (V-12)

Analyzes 4 school readiness tests to reveal the extent to which they assess unique and common factors in a sample of 66 kingergarten children.

495. **Terry, Ann.** Children's poetry preferences: a national survey of upper elementary grades. No. 16 in a series of research reports sponsored by the NCTE Committee on Research, 1974. Pp. 1-72. (III-4)

Uses tape recordings of 113 poems to select and analyze poems popular and unpopular with a representative sample of 422 middle school students. Assesses relationships between children's choices and sex, grade, school setting, and teacher variables.

496. TIBBETTS, SYLVIA-LEE. Children's literature—a feminist viewpoint. *California Journal of Educational Research*, January 1975, 26, 1-5. (I-5)

Discusses 6 frequent findings of research on portrayal of males and females in children's books.

497. TIBBETTS, SYLVIA-LEE. Research in children's literature: a need for standardized procedures. *Elementary English*, April 1975, 52, 503-504. (I-14)

Discusses methods and limitations of research on children's reading interests based on several studies.

498. TICHENOR, PHILLIP J.; RODENKIRCHEN, JANE M.; OLIEN, CLARICE N.; & DONOHUE, GEORGE A. Community issues, conflict, and public affairs knowledge. In Peter Clarke (Ed.) *New models for mass communication research. Sage annual reviews of communication research, Vol. II.* Beverly Hills: Sage Publications, 1973. Pp. 45-79. (III-1)

Tests 10 hypotheses about relationships among mass media coverage, controversial issues, and respondents' awareness of and attitudes toward the issues. Data were from interviews conducted in 15 community areas in Minnesota.

499. TILLMAN, CHESTER E.; MILLOTT, ROBERT F.; & LARSEN, JANET J. Using personality test data in individualized reading instruction: brief reports of five studies of personality and reading. In Phil L. Nacke (Ed.) Interaction: research and practice for college-adult reading. *Twenty-third Yearbook of the National Reading Conference*. Pp. 125-130. (I-14)

Summarizes 5 studies on personality and reading ability using samples of normals.

500. TIMKO, HENRY G. Effects of discrimination training mode and letter similarity on paired-associate learning. *The Journal of Educational Research*, October 1974, 68, 71-72. (IV-6)

Analyzes relationships among simultaneous and successive presentation of confusable and distinctive letters in terms of trials to criterion and transfer of training to words. Subjects were 40 first graders.

501. TIMMONS, BEVERLY A. Delayed auditory feedback as a factor influencing retention. *Perceptual and Motor Skills*, April 1974, 38, 399-402. (IV-5)

Investigates the literal comprehension of 80 undergraduates under various conditions of auditory feedback and immediate-delayed testing.

502. **Tipton, Leonard; Haney, Roger D.; & Basehart, John R.** Media agenda-setting in city and state election campaigns. *Journalism Quarterly.* Spring 1975, 52, 15-22. (III-1)

Tests the hypothesis that the media influence what people think about rather than what they think, using a comparison of media coverage of a gubernatorial and mayoral election. A total of 435 respondents were interviewed by telephone, some 3 times, some twice, and some once.

503. **Trecker, Janice Law.** Women in world history texts: females in "male" roles. *Interracial Books for Children,* 1974, *5(4),* 3, (III-2)

Describes the treatment of women in secondary school textbooks on European and world history.

504. **Tuinman, J. Jaap.** Determining the passage dependency of comprehension questions in 5 major tests. *Reading Research Quarterly,* 1973-1974, *9(2),* 206-223. (V-12)

Presents a study testing the passage dependency of 5 standardized tests, using 9,451 fourth through sixth grade students.

505. **Tuinman, J. Jaap.** Inspection of passages as a function of passage-dependency of the test items. *Journal of Reading Behavior,* Summer 1973, *5,* 186-191. (V-12)

Tests 48 sixth grade pupils to see if the subjects' investigation of a passage is affected by the degree of passage independency of the question.

506. **Tuinman, J. Jaap, & Brady, Mary Ella.** How does vocabulary account for variance on reading comprehension tests? A preliminary instructional analysis. In Phil L. Nacke (Ed.) Interaction: research and practice for college-adult reading. *Twenty-third Yearbook of the National Reading Conference.* Pp. 176-184. (V-6)

Investigates the effect of direct vocabulary instruction on standardized tests of reading comprehension. Subjects were 191 middle school students who were alternately assigned to instruction on words within the tests or on extra-test words.

507. **Tuinman, J. Jaap, & Farr, Roger.** Passage availability when answering passage-based questions for long and short reading selections. *Measurement and Evaluation in Guidance,* January 1972, 4, 234-237. (V-12)

Examines reading test performance of 280 eighth graders under conditions that allowed subjects to look back or not to look back at passage, long and short passages, and reading dependent and independent items.

508. **TURPIN, WILLIAM H.** Newspaper circulation growth and rise in personal income. *Journalism Quarterly*, Autumn 1974, *51*, 522-525. (III-9)

Tests the hypothesis that education and affluence predict newspaper circulation using data from a stratified random sample of 50 urban counties (final N = 213) in 1960 and 1970.

509. **VAN DER VEUR, BARBARA W.** Imagery rating of 1,000 frequently used words. *Journal of Educational Psychology*, February 1975, *67*, 44-56. (V-9)

Provides imagery ratings of 1,000 words and assesses their effect on retention of words taught by sight to 63 naive 5 to 7 year olds. Each child was taught 12 different words, 4 each rated high, medium, and low imagery.

510. **VANDEVER, THOMAS R., & NEVILLE, DONALD D.** Letter cues vs. configuration cues as aids to word recognition in retarded and non-retarded children. *American Journal of Mental Deficiency*, September 1974, *79*, 210-213. (IV-5)

Uses a contrived orthography to investigate learning speed and retention in 59 lower to lower middleclass, mentally retarded children (with WISC IQ's less than 85) and 53 middleclass non-mentally retarded first and second graders randomly assigned to one of 3 conditions (outline, contrast, letter cue).

511. **VANDEVER, THOMAS R., & NEVILLE, DONALD D.** Modality aptitude and word recognition. *Journal of Reading Behavior*, July 1974, *6*, 195-201. (V-5)

Investigates the effectiveness of matching instructional method to modality aptitude, using 72 second graders who were given 6 weeks of word teaching geared to either their strong or weak modality.

512. **VAN HORN, K. ROGER, & HOLLAND, JEAN M.** Relationships between the ABC Inventory and the Metropolitan Readiness Test. *Psychology in the Schools*, October 1974, *11*, 396-399. (V-12)

Factor analyzes a "quick" test of kindergarten readiness individually administered to 448 children prior to entering kindergarten and the *Metropolitan Readiness Test* administered toward the end of kindergarten.

513. **Veldman, Donald J., & Brophy, Jere E.** Measuring teacher effects on pupil achievement. *Journal of Educational Psychology*, June 1974, *66*, 319-324. (II)

Uses residual gains on standardized achievement tests administered in 4 successive years to investigate teacher stability in influencing student learning gains. Includes 115 second and third grade teachers with 5 or more years of experience teaching at the same grade level.

514. **Vellutino, Frank R.; Pruzek, Robert M.; Steger, Joseph A.; & Meshoulam, Uriel.** Immediate visual recall in poor and normal readers as a function of orthographic-linguistic familiarity. *Cortex*, December 1973, *9*, 370-386. (IV-6)

Attempts to determine the relative influence of spatial and other perceptual difficulties on the reading ability of 63 fourth through sixth graders defined as normal or poor readers.

515. **Vellutino, Frank R.; Steger, Joseph A.; Kaman, Mitchell; & DeSetto, Louis.** Visual form perception in deficient and normal readers as a function of age and orthographic-linguistic familiarity. *Cortex*, March 1975, *11*, 22-30. (IV-13)

Compares reproductions from memory of briefly presented Hebrew words by 22 poor and 44 normal readers in second and fourth grades. Each grade level contained equal numbers of poor and normal readers unfamiliar with Hebrew and normal readers learning Hebrew.

516. **Wagenberg, Ronald H., & Soderlund, Walter C.** The influence of chain-ownership on editorial comment in Canada. *Journalism Quarterly*, Spring 1975, 52, 93-98. (III-2)

Analyzes editorial themes in 4 chain and 3 independent newspapers during 1972 Canadian federal election to investigate allegations of collusion among chain paper editorialists.

517. **Wagner, Steven R., & Wilde, John E.** Learning styles: can we grease the cogs in cognition? In Malcolm P. Douglass (Ed.) Reading between and beyond the lines. *Claremont Reading Conference 37th Yearbook*, 1973. Pp. 135-142. (I-13)

Summarizes previous research findings on differences among Anglo, Black, and Chicano children from middle and lower socioeconomic backgrounds on locus of control, dependence/independence, impulsivity/reflectivity, and relational/analytic conceptualizing.

518. **Wakefield, James A., Jr.; Veselka, Ronald E.; & Miller, Leslie.** A comparison of the *Iowa Tests of Basic Skills* and the Prescriptive Reading Inventory. *The Journal of Educational Research*, May/June 1975, *68*, 347-349. (V-12)

Reports canonical correlations obtained from a norm-referenced test battery and a criterion-referenced test administered to 329 sixth graders.

519. **Wakefield, Mary W.** Sequential memory responses of normal and clinic readers. *Elementary English*, September 1973, *50*, 939-940. (IV-4)

Examines differences in performance of sequential responses on tests between 57 clinic readers (ages 6-7 to 13-7) and 57 normal readers (ages 6.6 to 13.7).

520. **Walker, Basil S.** Effects of inserted questions on retroactive inhibition in meaningful verbal learning. *Journal of Educational Psychology*, August 1974, *66*, 486-490. (IV-5)

Analyzes the effect on passage retention of interpolated learning, response requirement, and item type. The 80 college students and 74 eleventh graders involved were retested 7 days later.

521. **Walker, Mary Margaret.** Setting realistic goals for the ethnically different student. In Phil L. Nacke (Ed.) Interaction: research and practice for college-adult reading. *Twenty-third Yearbook of the National Reading Conference*. Pp. 265-267. (V-8)

Describes a program to facilitate transfer of reading and study skills to academic assignments, including a brief report of end of first and fourth year standing of 180 participating college students.

522. **Wallbrown, Fred H.; Blaha John; Counts, Dorotha H.; & Wallbrown, Jane D.** The hierarchical factor structure of the WISC and revised ITPA for reading disabled children. *Journal of Psychology*, September 1974, *88*, 65-76. (IV-3)

Presents an hierarchical factor solution obtained on correlations among WISC and ITPA subtests for 110 reading clinic referrals, ages 8 to 10.

523. **Wallbrown, Fred H.; Huelsman, Charles B., Jr.,; Blaha, John; & Wallbrown, Jane D.** A further test of Myklebust's cognitive structure hypotheses for reading disabled children. *Psychology in the Schools*, April 1975, *12*, 176-181. (IV-3)

Compares WISC subtest intercorrelations for normal and severe reading disabled subjects using data from other reports.

524. **Wallbrown, Fred H.; Wherry, Robert J., Sr.; Blaha, John; & Counts, Dorotha H.** An empirical test of Myklebust's cognitive structure hypotheses for 70 reading-disabled children.

Journal of Consulting and Clinical Psychology, April 1974, *42*, 211-218. (IV-3)

Uses a hierarchical factor solution on WISC subtest intercorrelations from 70 reading disabled children, ages 7-13, to compare their abilities structure with that of Wechsler's comparable norm group.

525. **Wallbrown, Jane D.; Wallbrown, Fred H.; & Engin, Ann W.** The relative importance of mental age and selected assessors of auditory and visual perception in the Metropolitan Readiness Test. *Psychology in the Schools*, April 1974, *11*, 136-143. (IV-4)

Utilizes 215 kindergarteners in assessing the importance of auditory, visual, and mental-age components in total scores on a standardized reading readiness test.

526. **Wallbrown, Jane D.; Wallbrown, Fred H.; Engin, Ann W.; & Blaha, John.** The prediction of first grade reading achievement with selected perceptual-cognitive tests. *Psychology in the Schools*, April 1975, *12*, 140-149. (IV-12)

Analyzes regression of first grade reading achievement on 10 predictor variables assessed in kindergarten, including IQ, perceptual abilities, and language comprehension. Subjects were a more or less stratified random sample of 100 children.

527. **Wark, David M., & Walch, Mary.** Heart rate of high and low test-panic readers. In Phil L. Nacke (Ed.) Interaction: research and practice for college-adult reading. *Twenty-third Yearbook of the National Reading Conference*. Pp. 209-213. (IV-13)

Presents heart rate data on 3 high and 3 low test anxious psychology students at rest and while reading to answer questions.

528. **Watts, Graeme H.** Effect of prequestions on control of attention in written instruction. *The Australian Journal of Education*, March 1974, *18*, 79-85. (IV-5)

Uses 80 fifth and sixth graders randomly assigned to groups asked a specific, general, integrative, or no question about a short passage prior to reading and taking a test on it.

529. **Weaver, David H.; Hopkins, W. Wat; Billings, William H.; & Cole, Richard R.** Quotes vs. paraphrases in writing: does it make a difference to readers? *Journalism Quarterly*, Autumn 1974, *51*, 400-404. (III-14)

Compares reader evaluations and understanding of news stories containing direct quotes versus paraphrases using a semantic differential type of instrument and a comprehension test. Subjects were 126 college students.

530. **Weeks, Leslie H.** An inquiry into the attitudes of infant teachers towards i.t.a. *Educational Research*, November 1972, *15*, 10-15. (II)

Reports questionnaire findings from headteachers and teachers of infants in an effort to determine what kind of teachers use i.t.a. and what the general feeling is toward i.t.a. in the teacher community.

531. **Weintraub, Samuel; Robinson, Helen M.; Smith, Helen K.; Plessas, Gus P.; & Rowls, Michael.** Summary of investigations relating to reading. (July 1, 1973, to July 30, 1974). *Reading Research Quarterly*, 1974-1975, *10*(3), 267-543. (I-1)

Summarizes 431 published research reports in reading. Includes an annotated bibliography.

532. **Weissenburger, Fred E., & Loney, Jan.** More on the "alphabetic neurosis." *Psychology in the Schools*, April 1975, *12*, 215-218. (IV-14)

Examines relationships of surname alphabetic position to age, sex, IQ, reading achievement, and personality ratings to test the hypothesis that tension is associated with waiting for one's name to be called. Subjects were 59 first and 76 sixth graders.

533. **Wheat, Thomas E., & Johns, Jerry L.** An exploratory investigation using the reading miscue inventory with disabled readers. *The New England Reading Association Journal*, 1975, *10*, 42-47. (IV-10)

Compares findings from analyses of 6 disabled readers' oral reading from a traditional test and the *Reading Miscue Inventory.* Subjects were 8- and 9-year-old children reading 2 to 3 years below expectance.

534. **Whisler, Nancy G.** Visual-memory training in first grade: effects on visual discrimination and reading ability. *The Elementary School Journal*, October 1974, *75*, 51-54. (V-5)

Uses analysis of covariance to compare reading achievement and visual skills of 152 first graders who received 15 weeks of visual memory training in addition to their regular instruction with achievement of 143 children who had received only basal instruction.

535. **White, William F., & Simmons, Margaret.** First grade readiness predicted by teachers' perception of students' maturity and students' perception of self. *Perceptual and Motor Skills*, August 1974, *39*, 395-399. (IV-14)

Examines relationships of 165 first graders' measured self concept and teachers' ratings of students' social, emotional, and academic maturity to standardized readiness test scores.

536. **Whittaker, Jeweleane Wilma.** Effects of a linguistic approach on the reading comprehension of black freshmen. In Phil L. Nacke (Ed.) Diversity in mature reading: theory and research. *Twenty-second Yearbook of the National Reading Conference*, 1973, Vol. 1. Pp. 263-269. (V-8)

Calculates which of 2 reading approaches would be most effective in increasing reading efficiency of 58 beginning black college students.

537. **Wiener, Roberta.** A look at reading practices in the open classroom. *The Reading Teacher*, February 1974, 27, 438-442. (II)

Investigates the responses of 500 open classroom teachers to a questionnaire with relation to reading.

538. **Wilbur, Ronnie Bring, & Quigley, Stephen P.** Syntactic structures in the written language of deaf children. *The Volta Review*, March 1975, 77, 194-203. (VI)

Describes patterns of syntactical errors made by deaf subjects using data from 450 students with IQ's over 80, ages 10-19. Discusses implications for teachers and reading materials.

539. **Wilhoit, G. Cleveland, & Auh, Taik Sup.** Newspaper endorsement and coverage of public opinion polls in 1970. *Journalism Quarterly*, Winter 1974, *51*, 654-658. (III-2)

Assesses the relationship between newspaper editorial endorsement of a candidate and coverage of the candidate in the public opinion polls.

540. **Wilks, Ivor.** The transmission of Islamic learning in the Western Sudan. In Jack Goody (Ed.) *Literacy in traditional society.* Cambridge, England: The University Press, 1968. Pp. 162-197. (III-7)

Describes the spread of knowledge into a group of towns, the Dyula, in the Western Sudan.

541. **Williams, David V.** Children's verbal learning and comprehension in aural and visual modes. *Perceptual and Motor Skills*, April 1974, *38*, 503-509. (IV-4)

Investigates the efficacy of 2 modal presentations of material on delayed measures of memory and reading comprehension in 96 fourth and sixth graders and 70 third graders.

542. **Williamson, Leon E., & Young, Freda.** The IRI and RMI diagnostic concepts should be synthesized. *Journal of Reading Behavior*, July 1974, 6, 183-194. (IV-10)

Analyzes miscues of 30 fourth, fifth, and sixth graders whose IRI performance placed them at fifth grade instructional level. Each subject read materials at his instructional and frustrational levels.

543. WILLMON, BETTY. Readability interference in reading mathematics texts. In Bonnie Smith Schulwitz (Ed.) *Teachers, tangibles, techniques: comprehension of content in reading.* Newark, Del.: International Reading Association, 1975. Pp. 31-36. (V-9)

Uses traditional and revised word frequency lists to determine frequencies of 473 technical terms introduced in mathematics textbooks for first through third grades.

544. WILLOWS, DALE M. Reading between the lines: selective attention in good and poor readers. *Child Development*, June 1974, 45, 408-415. (IV-12)

Compares the attentional reading behaviors of good and poor readers in a sample of 104 sixth grade boys and relates these data to reading ability.

545. WILSON, J. A. *Reading and number/mathematics in the lower primary school* (A summary report). Belfast, Ireland: Dorman & Sons, 1970. (V-1)

Reports survey findings from a representative sample of 10 per cent of Northern Ireland primary schools (80 per cent questionnaire return rate) on how teachers introduce and present reading and arithmetic to young children.

546. WILSON, JOHN A. *Reading standards in Northern Ireland.* The Northern Ireland Council for Educational Research, 1973. (V-1)

Reports results of a survey of measured reading levels of approximately 3,000 students, ages 11 and 15, more or less representatively sampled from 174 schools.

547. WILSON, JOHN D., & SPANGLER, PAUL F. The Peabody Individual Achievement Test as a clinical tool. *Journal of Learning Disabilities*, June/July 1974, 7, 384-387 (IV-13)

Correlates scores of 83 subjects whose mean chronological age was 9 years, on a school achievement test containing reading recognition and comprehension subtests with 3 standardized measures of intelligence.

548. WINKLEY, CAROL, & MEYERS, JANE. A follow-up study of thirty reading clinic clients—two and three years after diagnosis. *Illinois Reading Council Journal*, March 1975, 3, 24-27. (V-11)

Reports student progress and attitude toward reading, and parent and teacher satisfaction with clinic services provided 24 boys and 6 girls in fourth through twelfth grade at followup testing.

549. **Wissink, John F.; Kass, Corrine E.; & Ferrell, William R.** A Bayesian approach to the identification of children with learning disabilities. *Journal of Learning Disabilities*, March 1975, *8*, 158-166. (IV-13)

Reports 40 specialists' estimates of prevalence of characteristics associated with learning disability and their relatedness preliminary to the development of a screening procedure, using a method of combining probabilities of component disabilities according to base rates.

550. **Witt, William.** Effects of numerical data upon reading time and recall of scientific writing. *Journal of Applied Psychology*, September 1974, *59*, 532-534. (IV-17)

Uses a post-test-only design with 50 male and 50 female college students in order to compare the textual difficulty of 2 versions of an article—one with and one without numerical references. Length and readability were equal.

551. **Wolford, George.** Perturbation model for letter identification. *Psychological Review*, May 1975, *82*, 184-199. (I-14)

Presents a model accounting for data from a series of previously reported tachistoscopic experiments in which retinal locus, spacing, and array position of letter target were systematically varied.

552. **Wooster, Arthur D.** Acceptance of responsibility for school work by educationally subnormal boys. *British Journal of Mental Subnormality*, June 1974, *20*, 23-27. (VI)

Hypothesizes that mentally retarded children in an informal school have higher internal control and higher reading achievement than similar children in a formal school. Subjects were 2 groups of 20 boys matched for age and home background.

553. **Wunderlich, Elaine.** Black Americans in children's books. *The Reading Teacher*, December 1974, *28*, 282-285. (III-2)

Assesses inclusion of and sensitivity toward minorities in a random sample of 25 of the 175 new children's books purchased for a university library.

554. **Yancey, Anna V., & Singh, Jane M.** A study of racial attitudes in white first grade children. *Elementary English*, May 1975, *42*, 734-736. (V-5)

Uses pretests and post tests of racial attitudes to evaluate the effectiveness of a 30-day reading and language arts program depicting the color black favorably. There were 20 experimental and 21 control subjects in all-white first grades.

555. YOUNG, LAURENCE R., & SHEENA, DAVID. Eye-movement measurement techniques. *American Psychologist*, March 1975, *30*, 315-330. (I-14)

Provides a comprehensive summary of eye-movement recording devices, reviewed according to the basic property of the eye that is being measured. Evaluates the pros and cons of each technique.

556. ZELLINGER, DAVID A.; FROMKIN, HOWARD L.; SPELLER, DONALD E.; & KOHN, CAROL A. A commodity theory analysis of the effects of age restrictions upon pornographic materials. *Journal of Applied Psychology*, February 1975, *60*, 94-99. (III-14)

Uses Likert-type scales to assess evaluations of an alleged book as a function of statements about pornographic content and age restrictions. Subjects were 64 male college students, ages 19 to 28.

557. ZIMET, SARA G. Does book reading influence behaviour? *Reading (UKRA)*, March 1975, *9*, 18-25. (I-14)

Summarizes research bearing on issues such as what factors determine immediate and long-range influences of book reading on attitudes and behavior, including the applicability of mass media research to book reading.

558. ZIMET, SARA G., & CAMP, BONNIE W. Favorite books of first-graders from city and suburb. *The Elementary School Journal*, December 1974, *75*, 191-196. (IV-16)

Compares themes in books children checked out of libraries with themes in reading textbooks. Subjects were first graders in an innercity school (N = 152) and a suburban school (N = 45).

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